BOSS GNU / Linux
Bharat Operating System Solutions

Contents

- About FOSS
- About BOSS
- BOSS GNU / Linux Overview
- BOSS Deployments and Support
- BOSS Advantages Over Windows
- Conclusion

FREE / OPEN SOURCE SOFTWARE

Serve : Freedom to use software to meet one's own needs

Study : Freedom to study & modify the software

Share : Freedom to redistribute the modified / original version

Brief history of FOSS

Richard Stallman

– Father of FOSS

-- Set up the Free Software Foundation (FSF) in 1984

-- Started the GNU project to create a Free Operating System

-- Personally created free software like GCC (C Compiler), GDB (debugger), Emacs (text editor) and a host of tools

Linus Torvalds developed Linux, a Unix-like kernel

-- defacto kernel for GNU OS

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Brief history of FOSS contd.

- Perl, PHP, & Python (scripting languages), X windowing system, GCC Compiler
- Apache server, MySql / PostgreSql databases
- Gimp, Blender and a host of other packages
- Above all, **internet** provided the medium & impetus

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Open Source Community

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FOSS Concept

"Free as in Freedom"

does not mean "No Cost", but refers to the absence of constraint

The four freedoms:

0. to use the software for any purpose
1. to study the software
2. to modify the software
3. to share/distribute the original & modified versions

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Software Types

Proprietary

Owned by Company/individual

Usually given in binary form.

Users have restriction on its use

Cannot modify it

Cannot copy

Free/Open Source

Ensures 4 freedoms

0 Use for any purpose

1 Study and adapt(modify)

2 Distribute for free or fee

3 Distribute the modified source

source code is mandatory for 1 and 3

Free as in Free Speech and not as in Free Lunch

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FOSS Advantages

- Reliability, Modularity, Flexibility
- Security, Combats piracy
- Total Cost of Ownership – Low
- Non-Quantitative issues
- Freedom from control by others
- No vendor lock-in, combat piracy
- Protection from licensing litigation
- Social / Moral / Ethical correctness
- Freedom to innovate and be creative

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Bharat Operating System Solutions

BOSS Variants

BOSS

- 22 Indian language support
- Office Tools & Browsing
- Hardware and peripheral support

EduBOSS

- Edutainment
- Maths , Physics and Social Studies
- Tools for Teachers

BOSS Advanced Server

- Database, FTP, Proxy etc servers
- Thin client server
- Network analysis and Migration tools

BOSS Vs Windows

Hardware Compatibility

- For Windows one needs min configuration of 1GHZ processor+2GB RAM+30GB harddisk., whereas for BOSS min is 1 GB RAM+15GB harddisk

Applications

- Starting from Windows Media center till Photoshop, BOSS has equivalent applications. Few are listed below

- MS Office - Libreoffice , Abiword
- PhotoShop - GIMP , Blender
- Itunes - Banshee , Totem
- Outlook Mail - Evolution , Thunderbird

Security

- Windows is always open to Malwares and virus attacks and its always hard to enable security in the machine for an end user. BOSS provides all EAL4 listed security features and a one stop solution for implementing all the security features.

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Features	BOSS 6.0	Windows 8
System Requirements		
RAM	Atleast 1 GB MB	Windows 8 Home Basic – 2 GB Windows 8 Home Premium – 2 GB Windows 8 Professional – 2 GB Windows 8 Ultimate – 2 GB
Disk Space	Atleast 15 GB	Atleast 30 GB
Processor	32-bit (x86) or 64-bit (x64) processor	32-bit (x86) or 64-bit (x64) processor
Cost	Free	Windows 8 Home Basic * Windows 8 Home Premium * Windows 8 Professional * Windows 8 Ultimate *

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Features	BOSS 6.0	Windows 8
Vulnerability	Secure – as it has the traditional user privileges mechanism present in linux by default	Third party anti virus softwares have to be installed for protection.
Office Suite	Libreoffice. Price - Free	MS Office Suite Price *
Miscellenous Software	Has “Software Center” and “Synaptic Package Manager”, where more than 18,000 software applications can be installed in a single click.	Software has to be purchased from separate vendors mostly for a cost.
Language Support	Supports 18 Indian languages.	Does not support Indian languages (No Indian “Language Pack is present”, only “Language Interface Packs” are present)
Ibus	Available for Indian Languages.	No

Features	BOSS 6.0	Windows 8
Media Player	Totem Movie Player	Windows Media Player
Photo Manager	F-spot with public photo albums sharing and photo editing features	Picasa Photo manager* *Need to be installed separately
Image Manipulator	GIMP raster graphics editor - Free	Not included. Option: Adobe Photoshop*
Antivirus	Klamav Antivirus – Free Updated daily with online virus database	Not included.
Codec support	Support for all major audio and video formats.	Support for all windows and other proprietary formats.

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Support Structure of BOSS Linux

Support group setup at C-DAC Centres spread across the country.

Support group has also been setup at State Nodal agencies.

National help desk facility setup in C-DAC Chennai. Currently calls attended in English, Hindi, Tamil, Telugu, Kannada, Malayalam.

Support groups to be setup at Academic institutions.

You can explore the

- IRC channel.
- Join BOSS mailing lists.
- Join Users and Developers forum.
- Report a bug through the bug reporter tool.

Advantages of BOSS Linux Over Windows

- ✓ BOSS OS is Completely Free
- ✓ BOSS OS is free from virus attack
- ✓ More than 30000 free Applications are available in BOSS Repository
- ✓ BOSS OS is developed by CDAC Chennai and the Support is easily Available
- ✓ Unicode Font is fully Supported in BOSS
- ✓ All the free drivers are bundled default with BOSS
- ✓ Equivalent Application for windows are Available in BOSS

Necessary Training and support will be provided by CDAC for migration to BOSSLinux

Constraints

- People Should get the Exposure of BOSS OS.
- Windows specific Application and peripherals need to be analyzed for case to case and necessary changes need to be implemented to make as OS free component
- People Mindset Should get Change from Windows to BOSS OS.

Government order Provided by TN

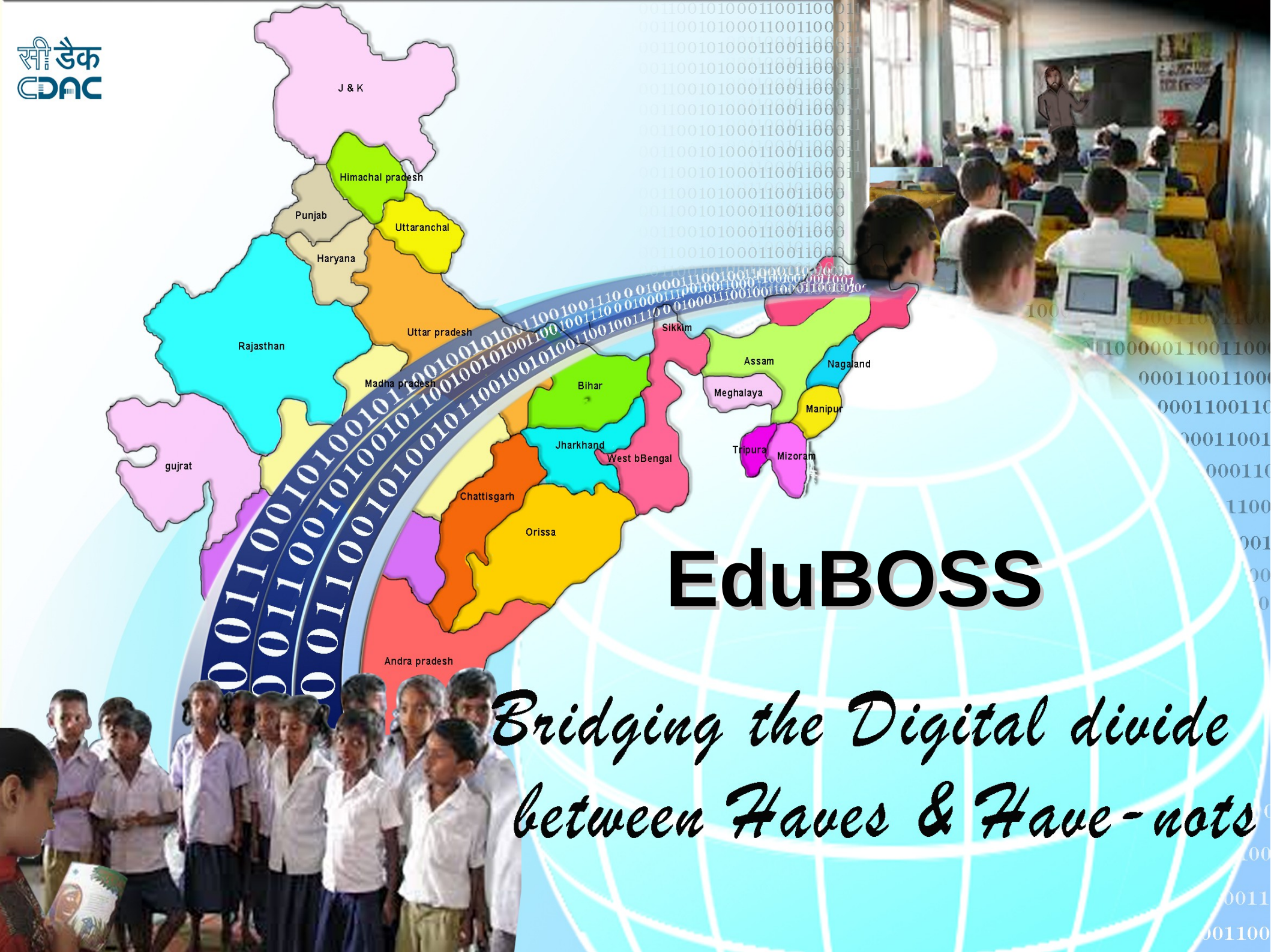
ABSTRACT

Information Technology Department - Mandatory installation of BOSS Operating System (an Open Source Operating System developed by C-DAC) in all the Computer Systems and should be used by Staff Members of Information Technology Department – Orders – Issued.

INFORMATION TECHNOLOGY (OP) DEPARTMENT

G.O. (Ms) No.15 **Dated:09.11.2011**

Read:


J & K
Himachal pradesh
Punjab
Uttaranchal
Haryana
Rajasthan
Uttar pradesh
Madha pradesh
gujrat
Sikkim
Assam
Nagaland
Meghalaya
Manipur
Tripura
Mizoram
Bihar
Jharkhand
West bBengal
Chattisgarh
Orissa
Andra pradesh
EduBOSS
Bridging the Digital divide
between Haves & Have-nots

What's it for?

- User-friendly OS for schools.
- Developed in collaboration with teachers.
- Provide teacher support tools
- facilitate creation of interactive teaching materials.
- No need of great technological knowledge.
- Used from primary to high school.

Deployments

Punjab

- Edusat Society
- PICTS

No.of Schools :6845
No.Of Desktops :50000

Haryana

- ICT

No.of Schools :2637
No.Of Desktops :58000

Chandigarh

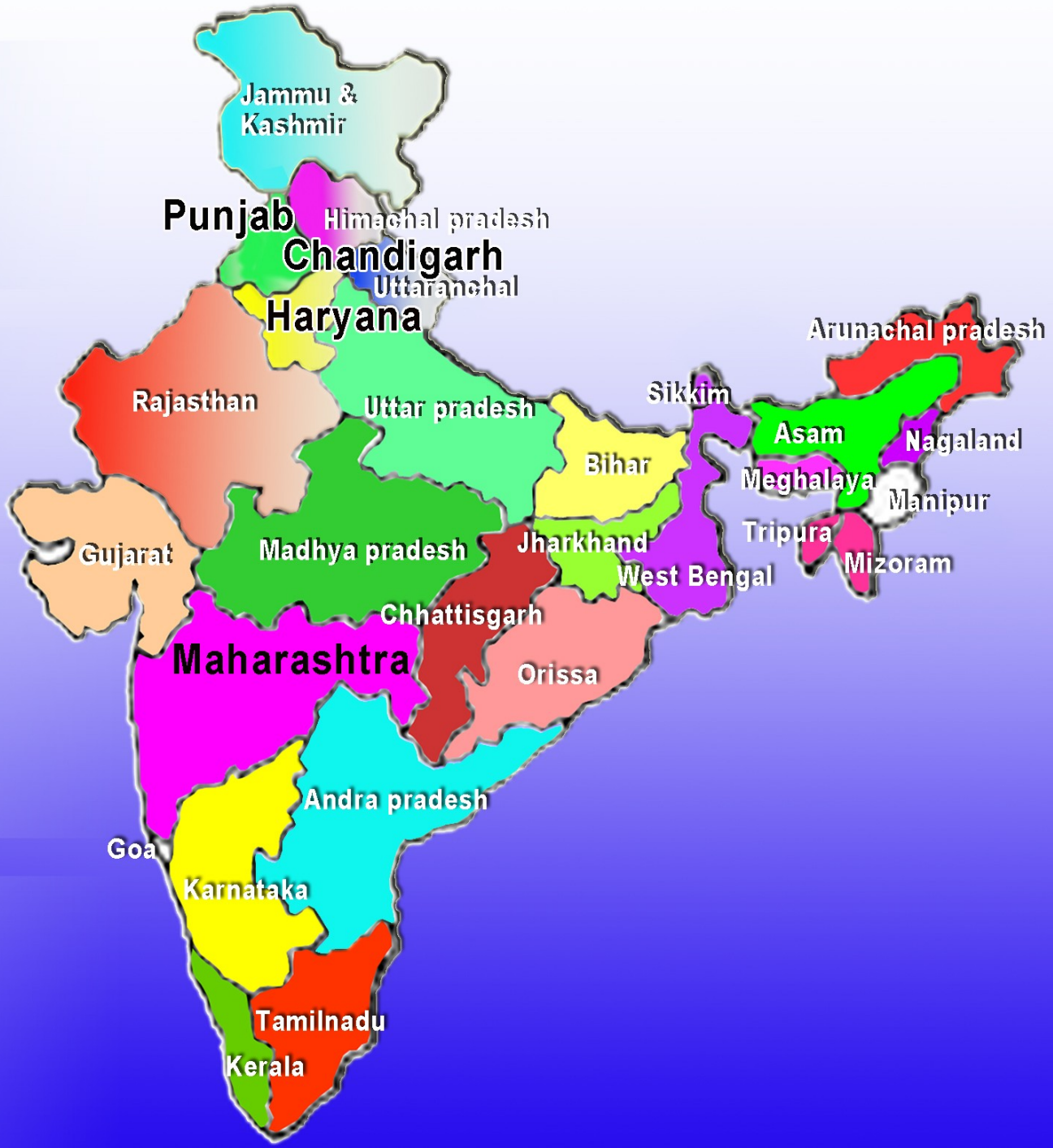
- Department of IT
  Chandigarh Administration
  (Schools)

No.of Schools :96
No.Of Desktops :1500

Maharashtra

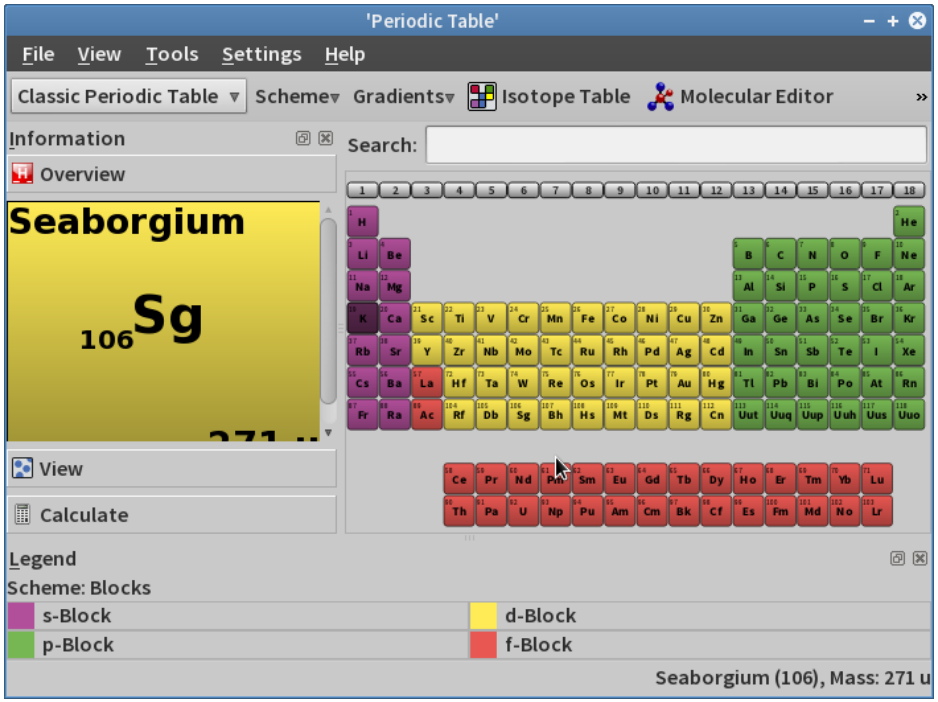
- Secondary and Higher
  Education Schools

No.of Schools :5000
No.Of Desktops :60000



Features of EduBOSS

- Leaner, less resource hungry version – 512 MB RAM, older processors.
- Developed in collaboration with teachers.
- Bundled content to lessen connectivity issues.
- Robust system with granular controls to enable students to play around with the system with lesser monitoring and greater flexibility.



Features

- Linux Kernel
- GNOME Desktop Environment
- Default support support for
  - Printers
  - video cards
  - scanners
  - Cameras
  - Wifi and Lan cards
- Office Productivity Suite

Features

Internet applications :

- **Iceweasel and Chromium Web browser**

With Indic language printing support and HTML5 support

- **Evolution mail client**
- **Bittorrent client**
- **microblogging client to configure all social networking blogs**
- **Remmina remote desktop client for both Windows and Linux desktops**
- **Pidgin Internet messenger with more plugins for different protocols**

Open source Licenses

The following OSI-approved licenses are popular, widely used, or have strong communities:

- Apache License 2.0.
- BSD 3-Clause "New" or "Revised" license.
- BSD 2-Clause "Simplified" or "FreeBSD" license.
- GNU General Public License (GPL)
- GNU Library or "Lesser" General Public License (LGPL)
- MIT license.
- Mozilla Public License 2.0.

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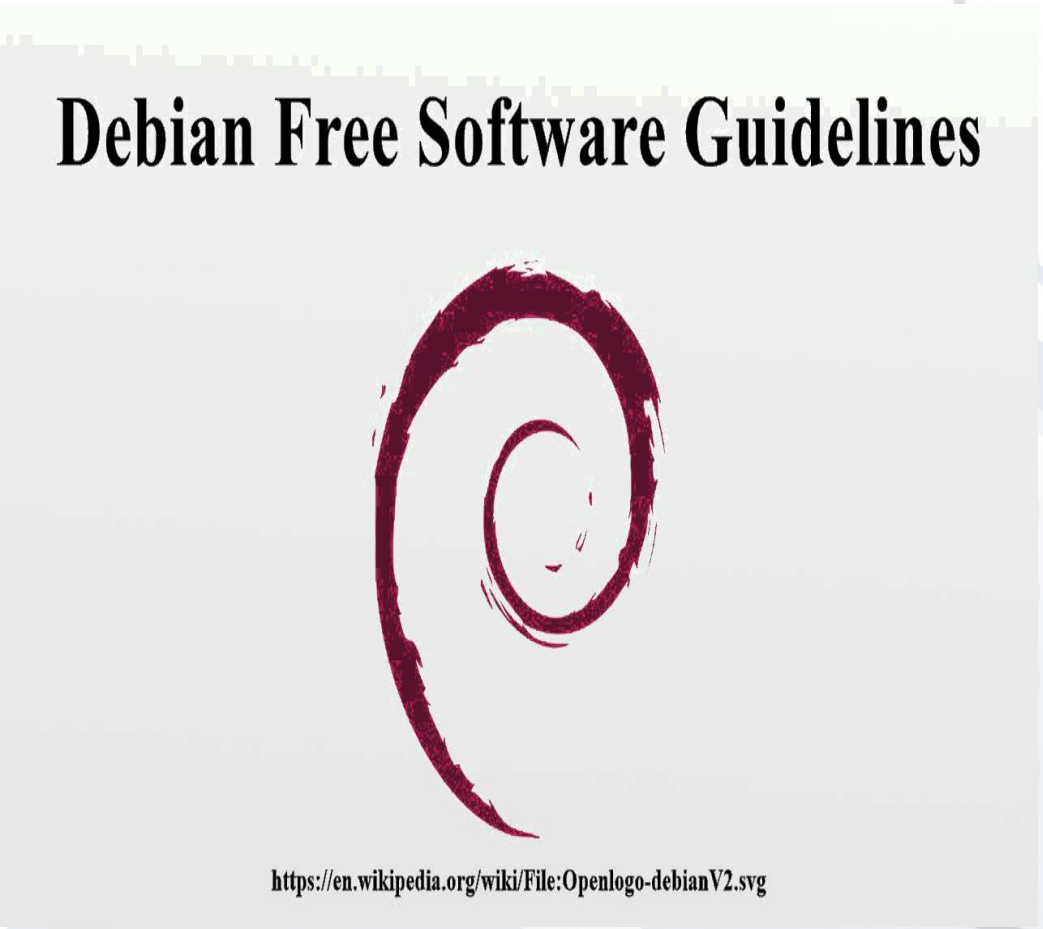
DFSG

Some of the Debian free software guidelines

- Free redistribution.
- Inclusion of source code.
- Allowing for modifications and derived works.
- Integrity of the author's source code
- The license needs to apply to all to whom the program is redistributed.
- The GPL, BSD licenses are examples of licenses considered free.



GPL

- Freedom to use the software for any purpose.
- Freedom to change the software to suit your needs.
- Freedom to share the software with your friends and neighbours.
- Freedom to share the changes you make.

DEMO FOR DIFFERENT APPLICATIONS IN BOSS 6.0

Thank You

Basic Linux Commands

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- mkdir – make directory

  usage: mkdir <dirname>

  eg: mkdir -p path/test/test1

  -p --> no error if existing, make parent directories as needed

- cd - change directories

  Use cd to change directories. Type cd followed by the name of a directory to access that directory.

- mv- change the name of a directory

  Type mv followed by the current name of a directory and the new name of the directory.

  Ex: mv testdir newdirname

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- cp - copy files and directories

  usage: cp source destination

  cp -i myfile yourfile

  With the "-i" option, if the file "yourfile" exists, you will be prompted before it is overwritten.

  cp -r srcdir destdir

  Copy all files from the directory "srcdir" to the directory "destdir" recursively.

- rmdir - Remove an existing directory
- rm - remove files or directories

  Usage: rm -r name

  Removes directories and files within the directories recursively.

- mount - Displays all mounted devices, their mount point, filesystem, and access.

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- Metacharacters -These are special characters that are recognized by the shell.
- * - matches 0 or more characters.

  eg: ls *.c
- ? - matches any single character

  eg: ls ab?.c
- [] - This will match any single character in the range.

  eg: ls tut[0-9].m

  This will find files such as tut0.m, tut9.m etc.,
- > - Redirect standard output to a file.

  echo “hello world” > hello.txt

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- uname - print system information

  eg: uname -a

- diff - find differences between two files

  diff [options] from-file to-file

  eg: diff -u testfile1 testfile2

- sort –reorders lines of text file.

  eg: sort testfile

- To remove duplicates use -u option with sort command

  sort -u testfile

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- man displays the documentation for a command

  usage: man <command name>

  eg: man mkdir

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- cat - used to display the contents of a small file on terminal

  usage: cat <file name>

- more and less commands are used to view large files one page at a time

  usage: more <file name>

  usage: less <file name>

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File System Management

File System

- A file system is the method and data structure that an operating system uses to keep track of files on a disk or partition.
- It organizes these files for storage, manipulation, and retrieval by the computer's operating system
- Linux views all file systems from the perspective of a common set of objects.
- The objects are
  - Superblock
  - Inode
  - Dentry
  - File

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Partitioning

- Disk partitioning is the act of dividing a hard disk drive into multiple virtual hard disk drives, referred to as partitions
- A partition is a contiguous set of blocks on a drive that are treated as an independant disk
- A maximum of four partitions can be placed on any hard disk. These are sometimes called **primary partitions**.
- One of the four partitions may be designated as an extended partition. This partition may then be subdivided into multiple **logical partitions**.

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Partitioning in Linux

- There are two kinds of major partitions on a Linux system:
- **Data partition:** normal Linux system data, including the root partition containing all the data to start up and run the system; and
- **swap partition**: expansion of the computer's physical memory, extra memory on hard disk

Tools/Software

- fdisk
- gparted

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Swap Partition

- Linux requires a “swap” partition to use for a disk cache.
- It is a space to write data to when all the physical memory is used up.
- Can be created using gparted, by selecting filesystem type to be “linux-swap”

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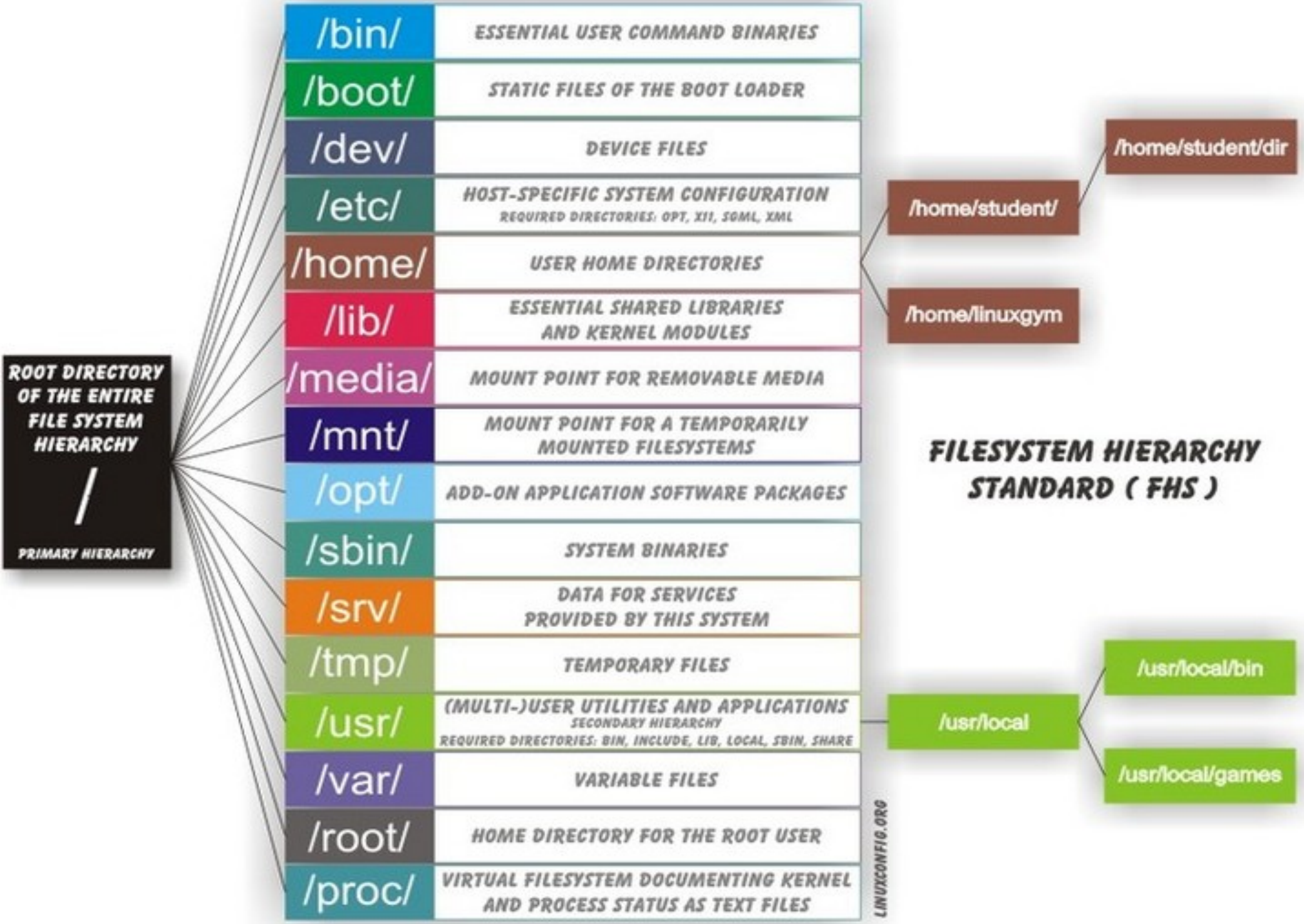
ROOT DIRECTORY OF THE ENTIRE FILE SYSTEM HIERARCHY
/
PRIMARY HIERARCHY
/bin/
ESSENTIAL USER COMMAND BINARIES
/boot/
STATIC FILES OF THE BOOT LOADER
/dev/
DEVICE FILES
/etc/
HOST-SPECIFIC SYSTEM CONFIGURATION
REQUIRED DIRECTORIES: OPT, X11, SGML, XML
/home/
USER HOME DIRECTORIES
/home/student/
/home/student/dir
/home/linuxgym
/lib/
ESSENTIAL SHARED LIBRARIES AND KERNEL MODULES
/media/
MOUNT POINT FOR REMOVABLE MEDIA
/mnt/
MOUNT POINT FOR A TEMPORARILY MOUNTED FILESYSTEMS
/opt/
ADD-ON APPLICATION SOFTWARE PACKAGES
/sbin/
SYSTEM BINARIES
/srv/
DATA FOR SERVICES PROVIDED BY THIS SYSTEM
/tmp/
TEMPORARY FILES
/usr/
(MULTI-)USER UTILITIES AND APPLICATIONS
SECONDARY HIERARCHY
REQUIRED DIRECTORIES: BIN, INCLUDE, LIB, LOCAL, SBIN, SHARE
/usr/local
/usr/local/bin
/usr/local/games
/var/
VARIABLE FILES
/root/
HOME DIRECTORY FOR THE ROOT USER
/proc/
VIRTUAL FILESYSTEM DOCUMENTING KERNEL AND PROCESS STATUS AS TEXT FILES
FILESYSTEM HIERARCHY STANDARD (FHS)
LINUXCONFIG.ORG

Mounting

- Mounting a device/partition means attaching it to the linux file system. Its done using the linux command 'mount'
- A mount point is a location on the file system tree
- Usage of mount command,

mount -t type device dir

tells the kernel to attach the file system found on **device** (which is of type '**type**') at the directory **dir**.

Example :

mount -t iso9660 /dev/cdrom /media/cdrom

Optical disks use the ISO9660 format

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Mounting ISO image

- An ISO image is an archive file (disk image) of an optical disc using a conventional ISO format.
- ISO image files typically have a file extension of .ISO

Steps

- Login as root user
- Create a mount point “ mkdir /mnt/disk”
- mount -o loop disk1.iso /mnt/disk

Note

Mounting a file containing a filesystem via such a loop mount makes the files within that filesystem accessible.

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Unmounting

- umount is the command used for unmounting
- It instructs the operating system that the file system should be disassociated from its mount point, making it no longer accessible.

Usage :

umount /dev/sdb ----- > based on device

or

umount /mnt/usb ----- > based on mountpoint

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Labels

- Volume labels make it possible for partitions to retain a consistent name regardless of where they are connected, and regardless of whatever else is connected.
- Labels are not mandatory for a linux volume.
- Each can be a maximum of 16 characters long.
- e2label or tune2fs command can be used to set/change label of the filesystem.

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UUID

- UUID is Universally Unique Identifier
- With UUID Linux kernel should automatically find and map (mount to exact location) volumes to storage device. This saves lots of time and avoid /etc/fstab breaks.
- UUID's for a device can be found using the following commands,
    - blkid
    - ls -l /dev/disk/by-uuid

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/etc/fstab...

Sample entries of /etc/fstab file :

based on /dev

```
/dev/sda2            /           ext3     defaults        0     1
```

based on UUID identifiers

```
UUID=24f28fc6-717e-4bcd-a5f7-32b959024e26  /    ext4  defaults
    0     1
```


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Recovering corrupted filesystem

- **Tools used,**
  - **fsck –** filesystem check and repair
  - **testdisk** - partition recovery utility
  - **photorec** – recovers lost files from hard disk

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File System Maintenance

- File System checked at bootup
- Maintaining consistency with fsck

fsck

- fsck (**f**ile **s**ystem **c**hec**k**) is a tool for checking the consistency of a file system.
- It is run automatically at boot time when the operating system detects that a file system is in an inconsistent state, indicating a non-graceful shutdown, such as a crash or power loss.
- It is also run manually by the system administrator.

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File System Maintenance...

- **Steps to use fsck manually**
  - Unmount the filesystem to be checked
    - umount /dev/sda3
  - Now run fsck on the partition
    - fsck -t ext3 /dev/sda3
  - Once fsck is finished, remount the partition
- If any files are recovered then they are placed in /lost+found directory by fsck command.
- **Forcing fsck on next reboot**
  - Run the following command with root privilege
    - shutdown -rF now

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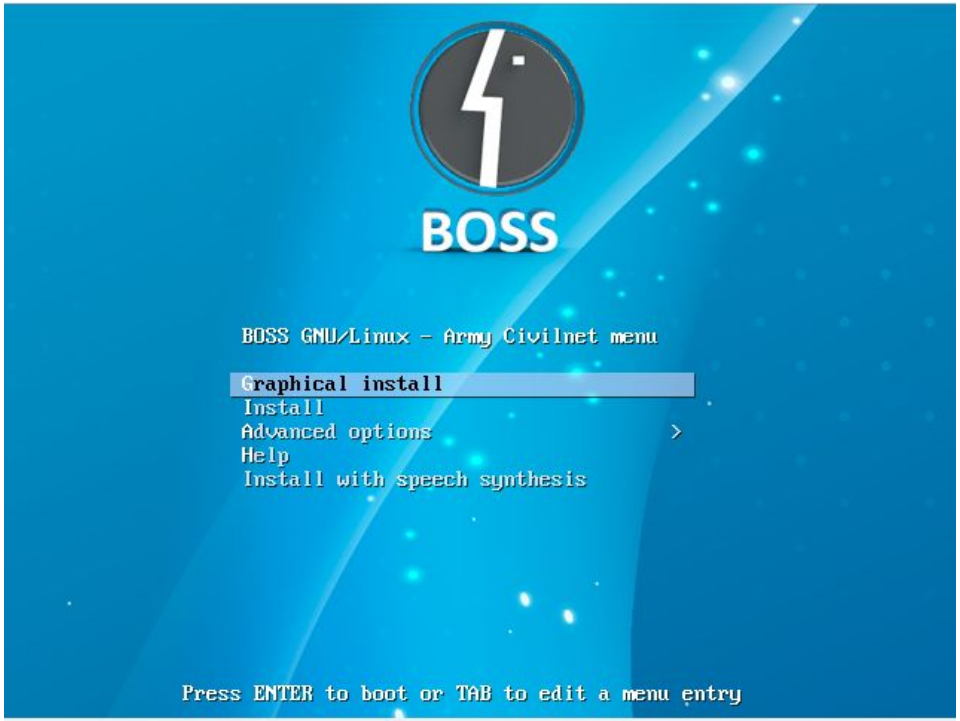
BOSS Linux Installation & Configuration

Hardware Overview

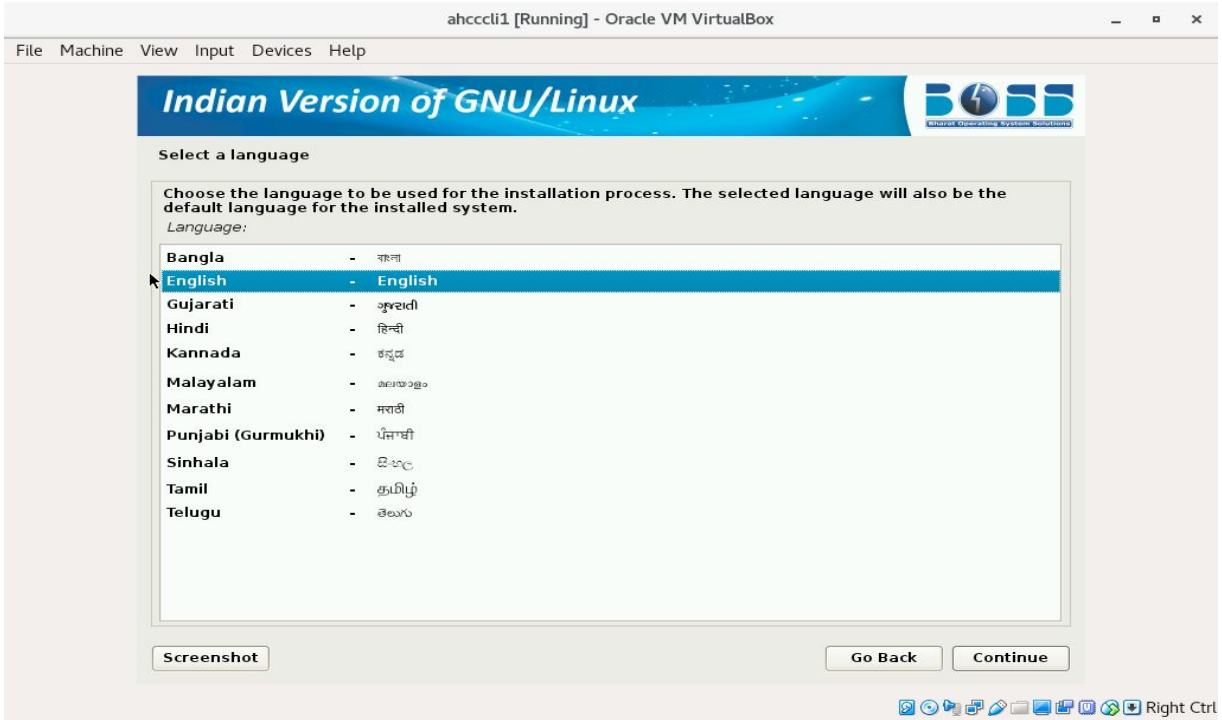
Minimum Hardware Requirement

- 1GB RAM
- 40 GB Hard Disk
- Dual Core Processor

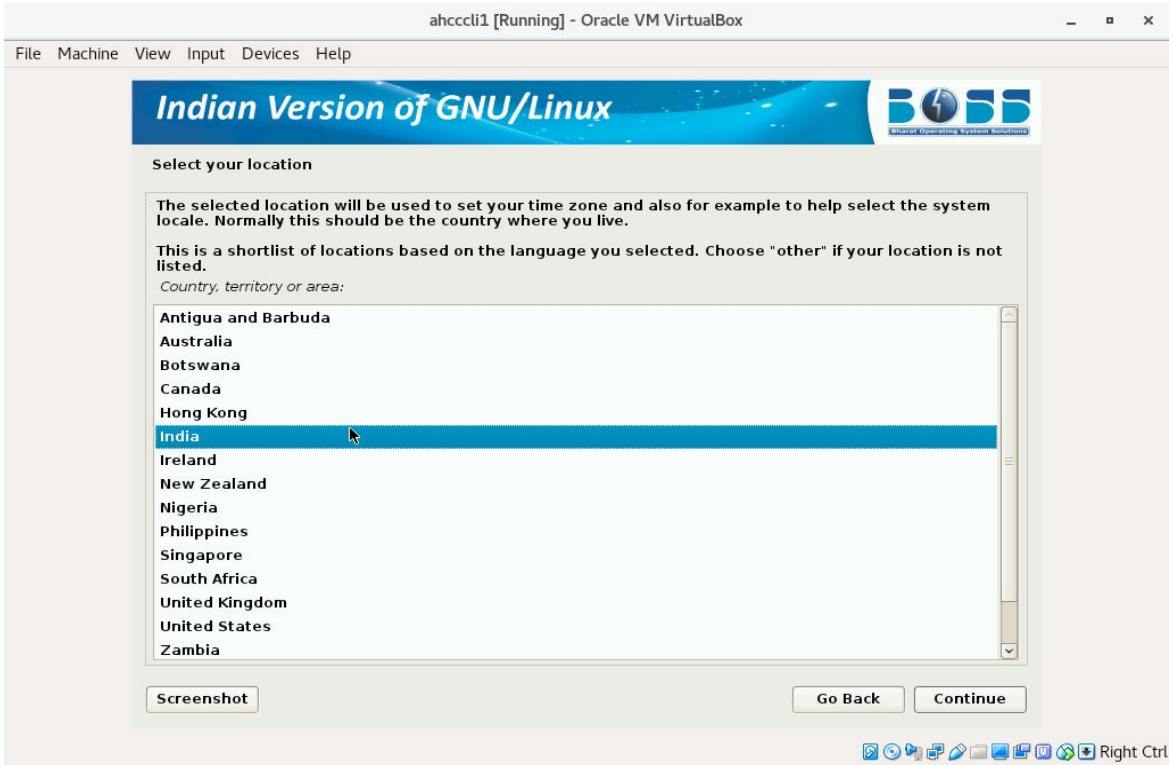
Civilnet Installation



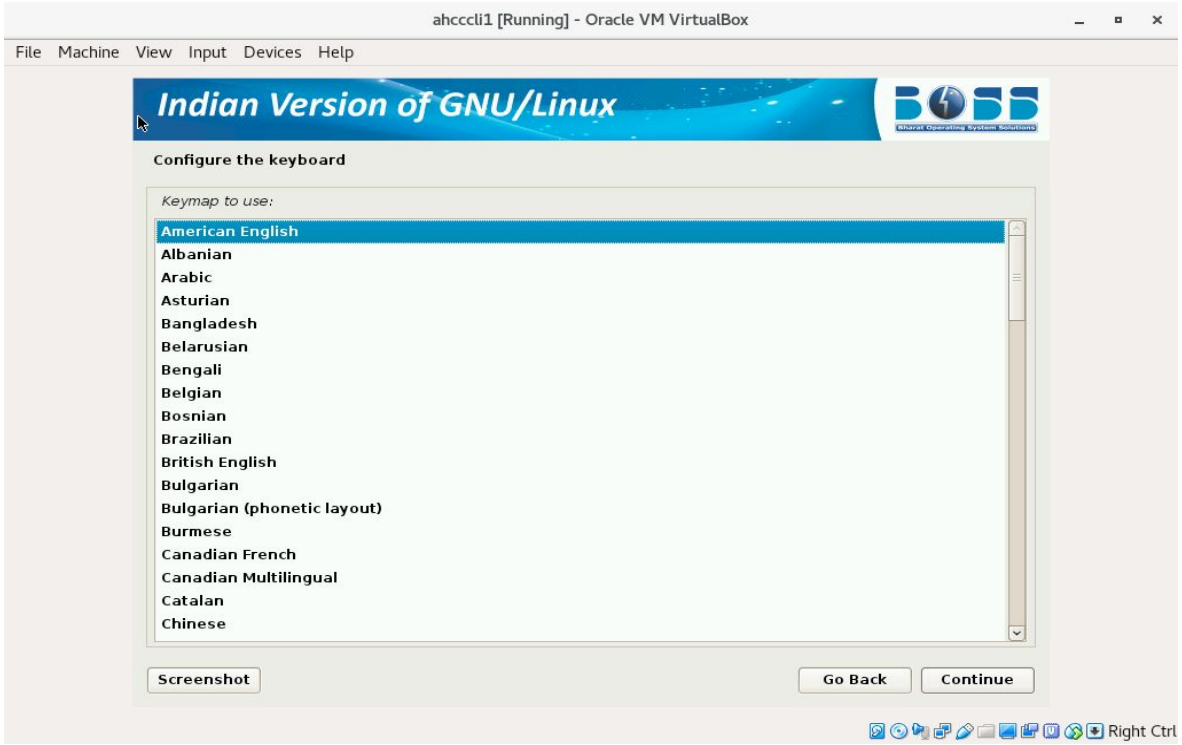
Select a Language



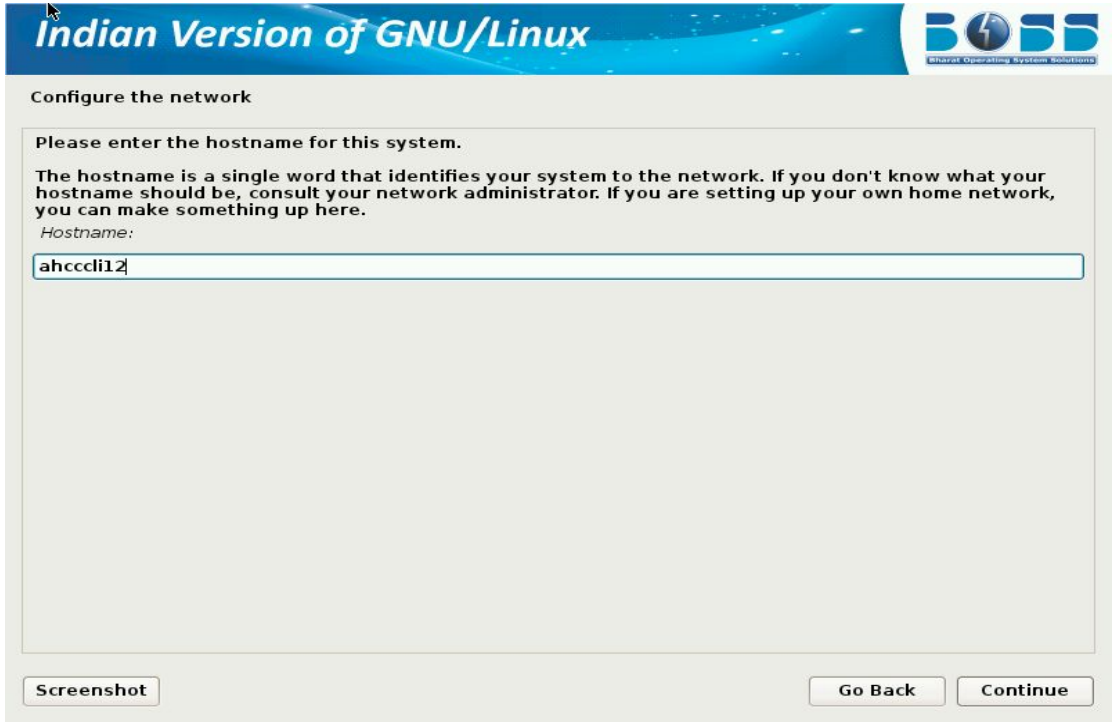
Select Location



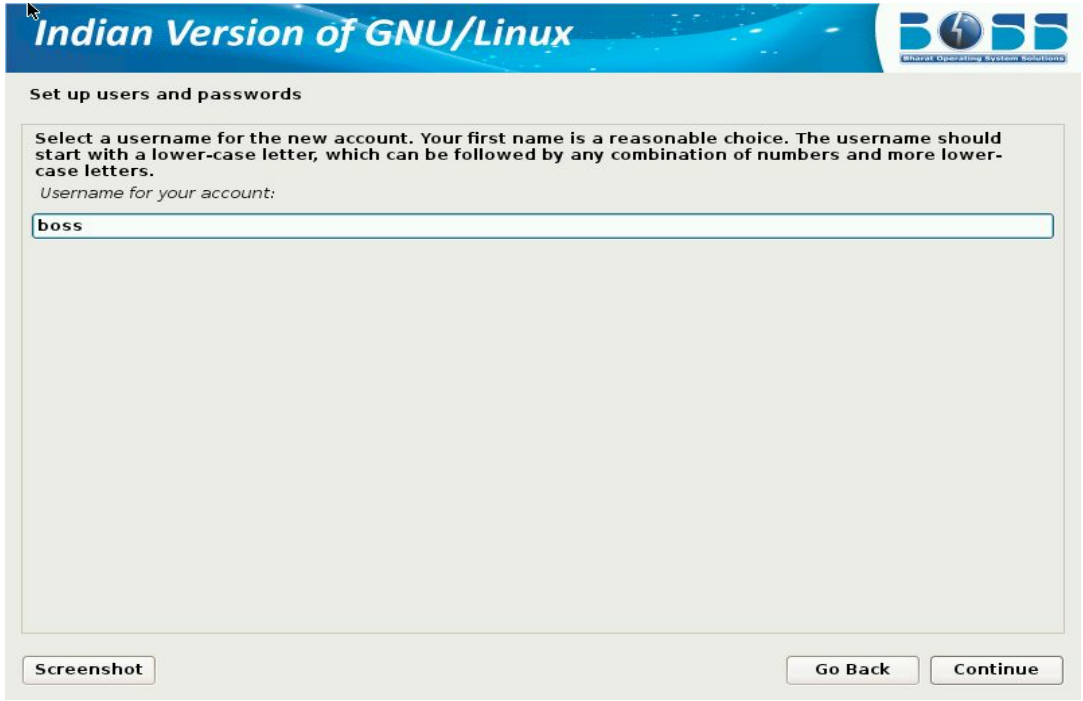
Configure the Keyboard



Network Configuration



Setup Users and Passwords

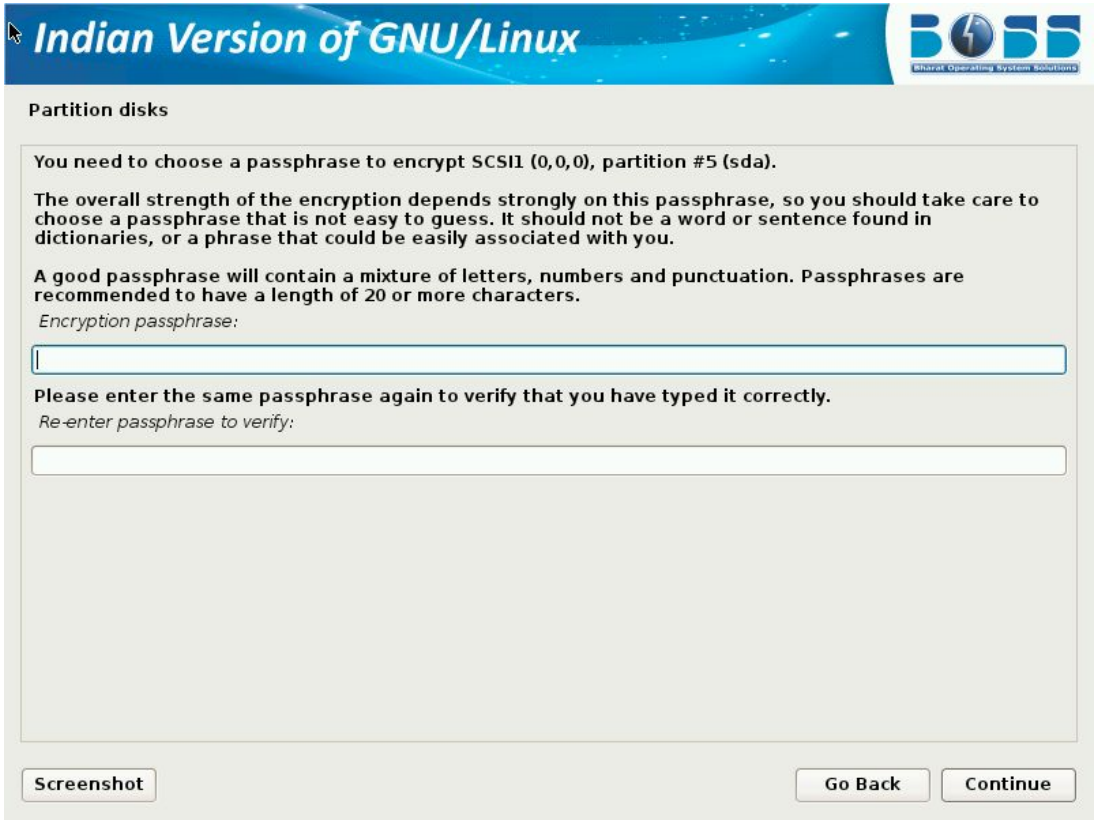


Password

Indian Version of GNU/Linux
BOSS
Bharat Operating System Solutions
Set up users and passwords
A valid password should contain a mixture of upper and lower case letters, numbers , punctuation characters and a minimum of 10 character long. Example: ZXCV(78)bn , QWERty!@3456
A password will be accepted as a valid one, only if it satisfies all the above conditions. The user will be prompted for a password until you enter a valid password.
Choose a password for the new user:
Please enter the same user password again to verify you have typed it correctly.
Re-enter password to verify:
Screenshot
Go Back
Continue

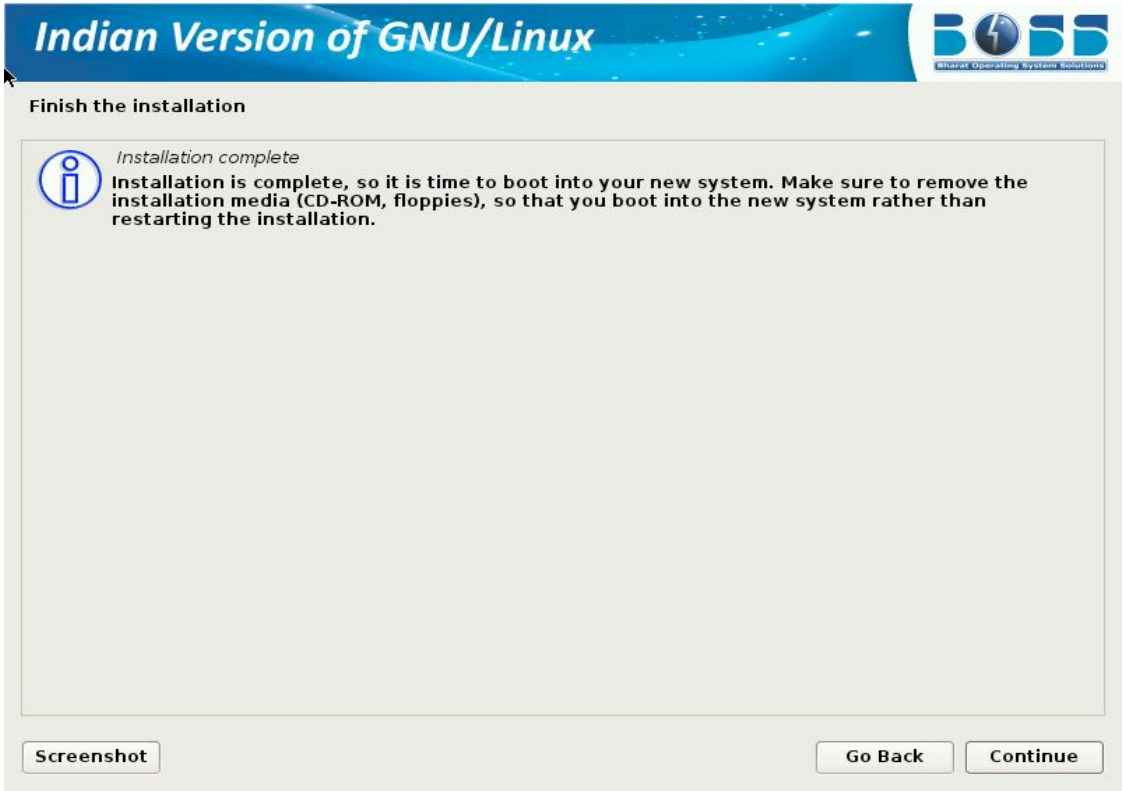
LVM Configuration

Encryption Passphrase



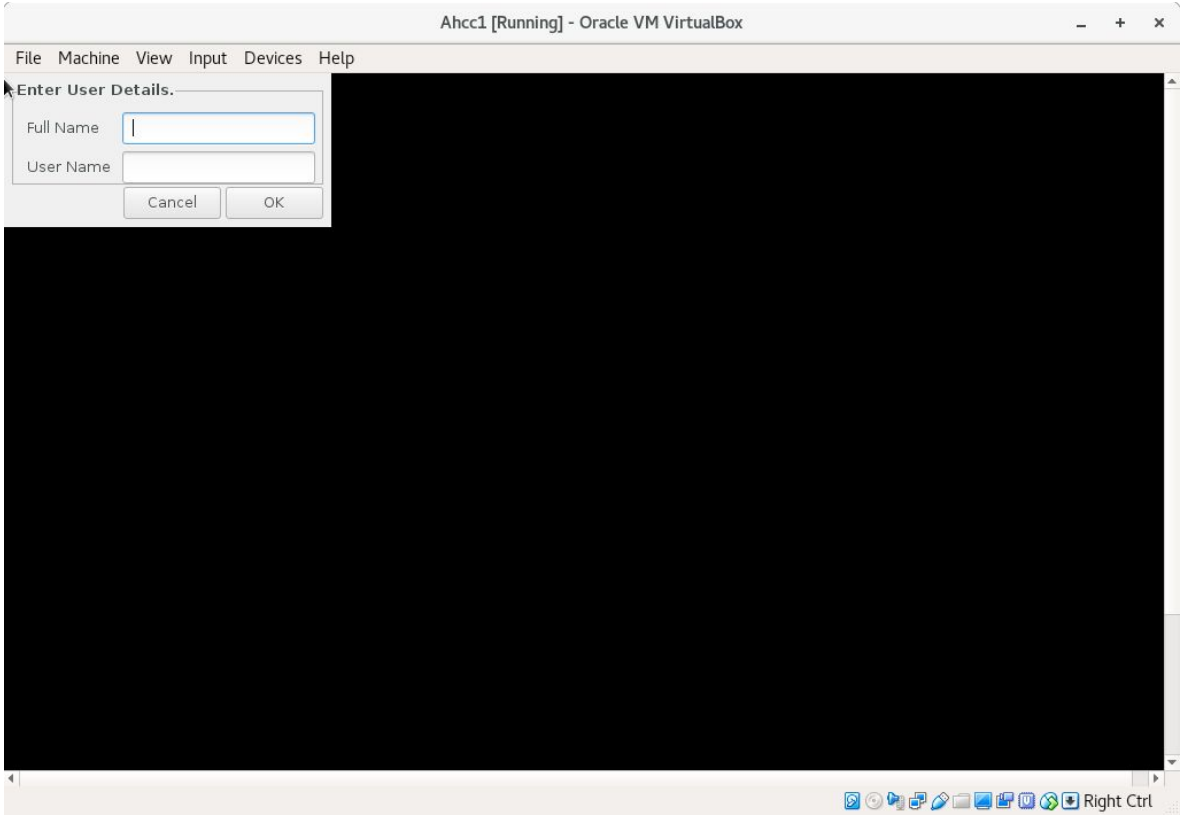
Grub Installation

Finish Installation



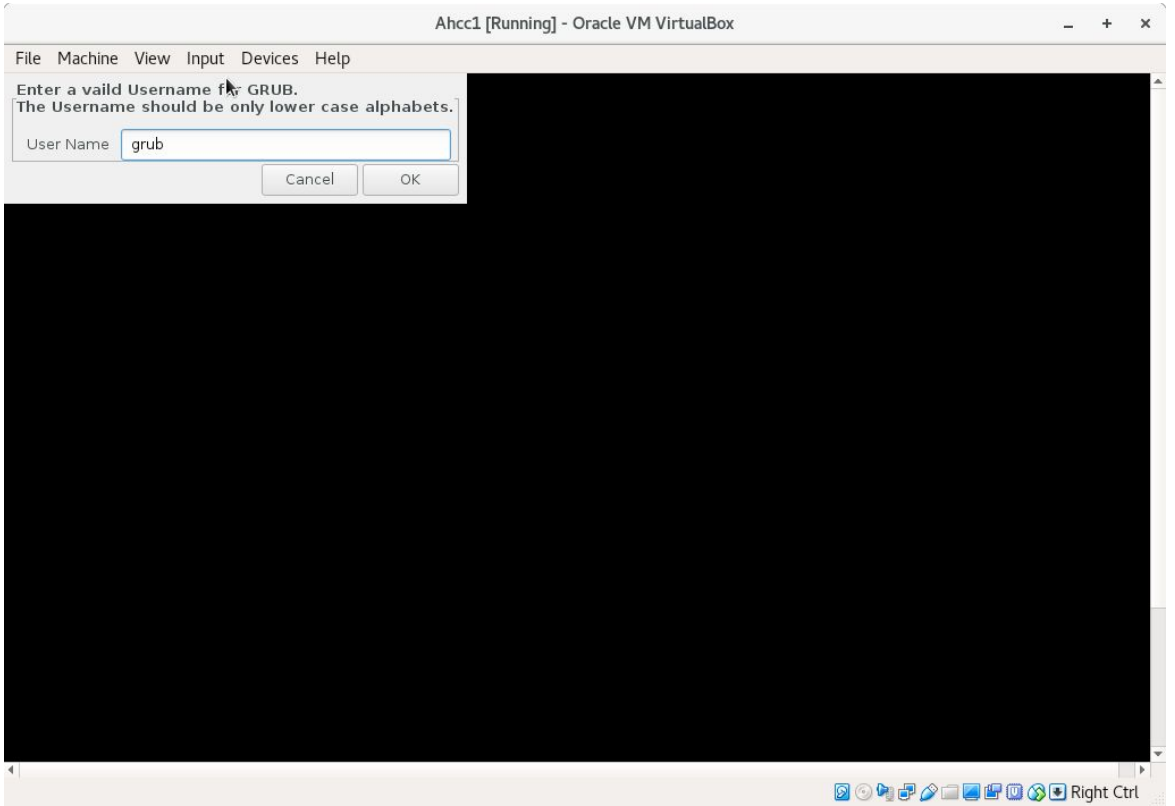
Client Configuration

Normal Username and Password Configuration



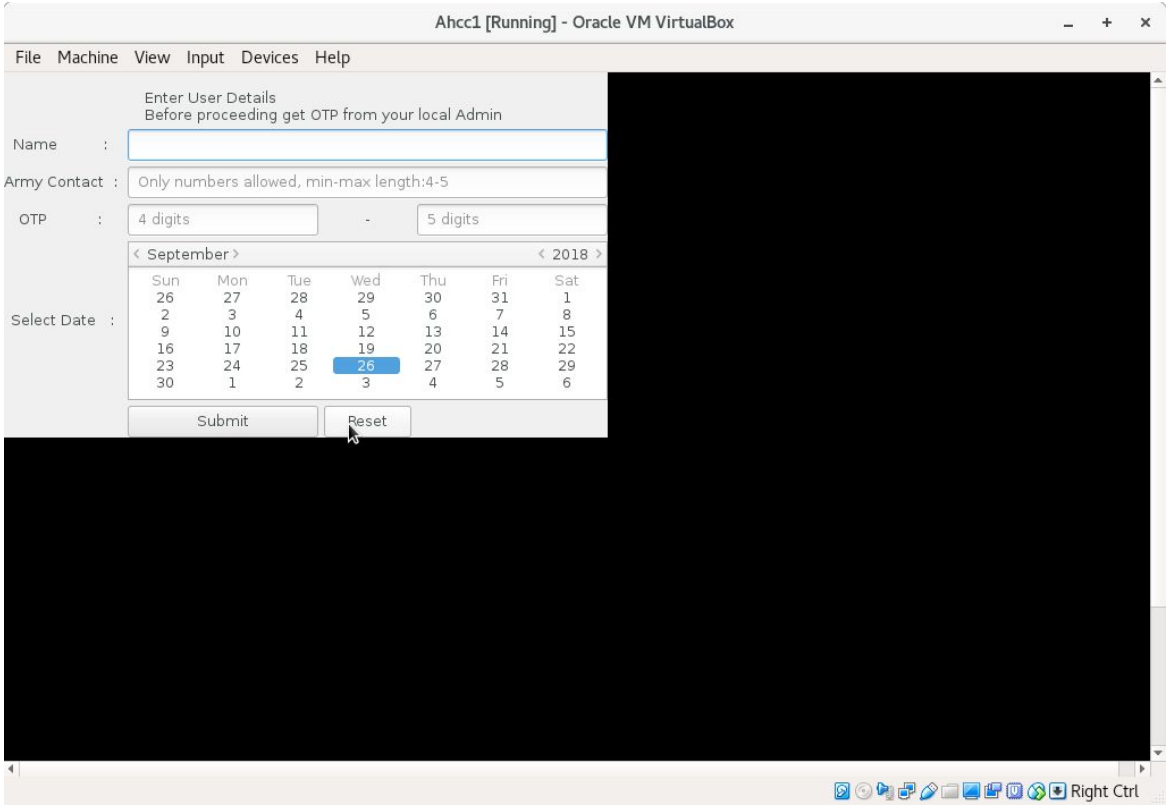
Grub Security Configuration

Grub Username and Password Configuration



Client Registration Configuration

- Name of the Machine
- Army Contact Number
- OTP to be get from the regional Administrator
- Select Correct Date



Network Management

Network Manager

- Dynamic network control and configuration system that attempts to keep network devices and connections up and active when they are available.
- NetworkManager consists of
  - core daemon
  - GNOME Notification Area applet that provides network status information
  - graphical configuration tools that can create, edit and remove connections and interfaces
- NetworkManager can be used to configure the following types of connections:
  - Ethernet
  - wireless
  - mobile broadband
  - DSL
  - PPPoE (Point-to-Point over Ethernet)

Network Manager

- NetworkManager allows for
  - the configuration of network aliases
  - static routes
  - DNS information
  - VPN connections
  - as well as many connection-specific parameters

The NetworkManager Daemon

- The NetworkManager daemon runs with root privileges and is usually configured to start up at boot time.
- You can determine whether the NetworkManager daemon is running by entering this command as root:
  - service NetworkManager status

Interacting with NetworkManager

- The applet has multiple states that serve as visual indicators for the type of connection you are currently using.

Connecting to a Network

- When you left-click on the applet icon, you are presented with:
  - a list of categorized networks you are currently connected to (such as Wired and Wireless);
  - a list of all Available Networks that NetworkManager has detected;
  - options for connecting to any configured Virtual Private Networks (VPNs); and,
  - options for connecting to hidden or new wireless networks.

Connecting to a Network

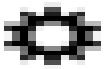
- If you are connected to a network, its name is presented in bold typeface under its network type, such as Wired or Wireless.
- When many networks are available, such as wireless access points, the More networks expandable menu entry appears.

Wired Networking

Connect to a wired (Ethernet) network

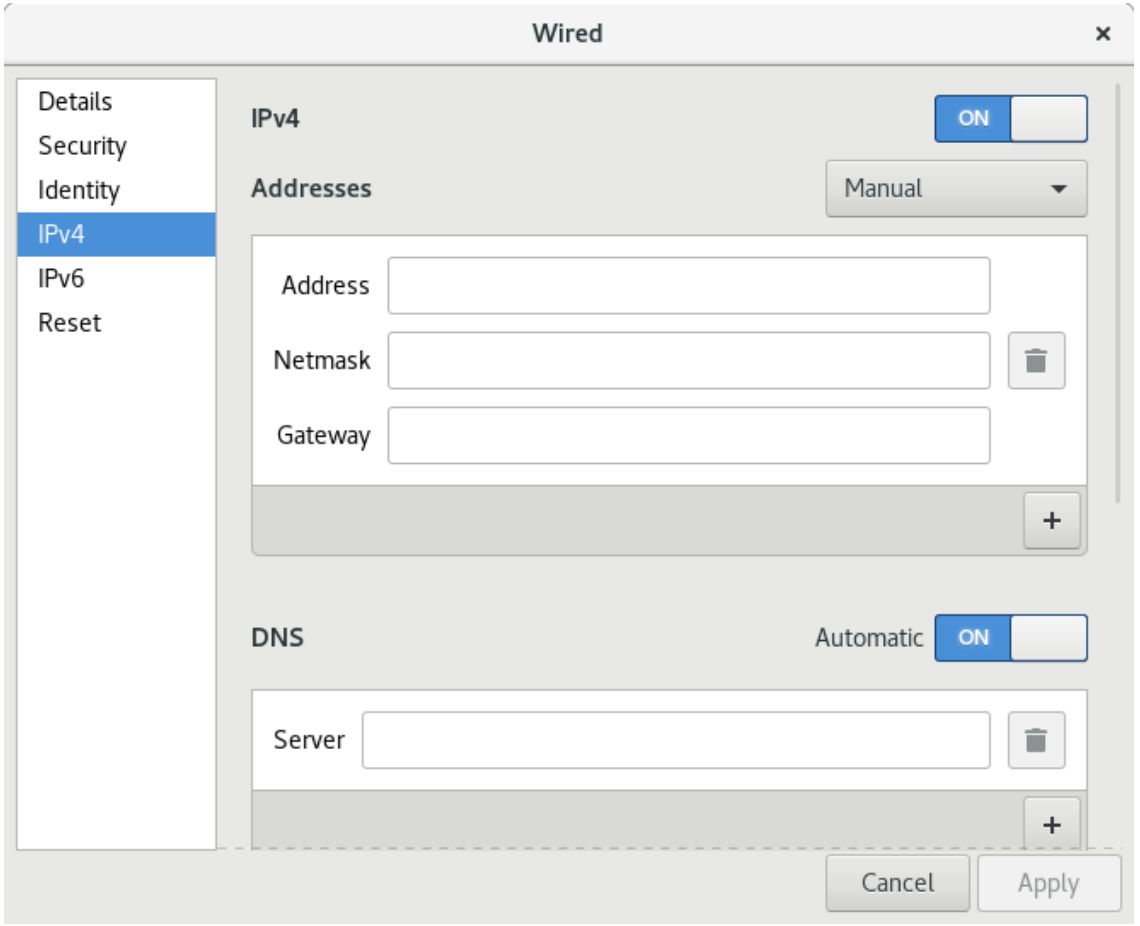
- To set up most wired network connections, all you need to do is plug in a network cable.
- The wired network icon (settings) is displayed on the top bar with three dots while the connection is being established.
- The dots disappear when you are connected.
- If this does not happen, you should first of all make sure that your network cable is plugged in.
- One end of the cable should be plugged into the rectangular Ethernet (network) port on your computer, and the other end should be plugged into a switch, router, network wall socket or similar (depending on the network setup you have).
- Sometimes, a light beside the Ethernet port will indicate that it is plugged in and active.
- If you are still not connected, your network may not support automatic setup (DHCP). In this case you will have to configure it manually.

Manually set network settings

- To manually set your network settings:
  - Open the Activities overview and start typing Settings.
  - Click on Settings → Network
  - In the left pane, select the network connection that you want to set up manually. If you plug in to the network with a cable, click Network. Otherwise click Wi-Fi.
  - Make sure that your wireless card is turned on or a network cable is plugged in.
  - Click the  button.
    - For a Wi-Fi connection, the settings button will be located next to the active network.

Manually set network settings

- Click on IPv4 or IPv6 in the left pane and change the Addresses to Manual.
- Type in the IP Address and Gateway, as well as the appropriate Netmask.



Manually set network settings

- In the DNS section, switch Automatic to OFF. Enter the IP address of a DNS server you want to use. Enter additional DNS server addresses using the + button.
- In the Routes section, switch Automatic to OFF. Enter the Address, Netmask, Gateway and Metric for a route you want to use. Enter additional routes using the + button.
- Click Apply. If you are not connected to the network, click the system status area on the top bar and connect. Test the network settings by trying to visit a website or look at shared files on the network, for example.

Wireless Networking

- If you have a wireless-enabled computer, you can connect to a wireless network that is within range to get access to the internet, view shared files on the network, and so on.
  - Open the system menu from the right side of the top bar.
  - Select Wi-Fi Not Connected. The Wi-Fi section of the menu will expand.
  - Click Select Network.
  - Click the name of the network you want, then click Connect.
    - If the name of the network is not in the list, try clicking More to see if the network is further down the list. If you still do not see the network, you may be out of range, or the network might be hidden.
  - If the network is protected by a password (encryption key), enter the password when prompted and click Connect.
    - If you do not know the key, it may be written on the underside of the wireless router or base station, or in its instruction manual, or you may have to ask the person who administers the wireless network.

Wireless Networking

  - The network icon will change appearance as the computer attempts to connect to the network.
  - If the connection is successful, the icon will change to a dot with several curved bars above it. More bars indicate a stronger connection to the network. Fewer bars mean the connection is weaker and might not be very reliable.

- If the connection is not successful, you may be asked for your password again or it might just tell you that the connection has been disconnected.

Connect to a hidden wireless network

- It is possible to set up a wireless network so that it is “hidden.”
- Hidden networks won’t show up in the list of wireless networks displayed in the Network settings.
- To connect to a hidden wireless network:
  - Open the system menu from the right side of the top bar.
  - Select Wi-Fi Not Connected. The Wi-Fi section of the menu will expand.
  - Click Wi-Fi Settings.
  - Click the Connect to Hidden Network… button.
  - In the window that appears, select a previously-connected hidden network using the Connection drop-down list, or New for a new one.
  - For a new connection, type the network name and choose the type of wireless security from the Wi-Fi security drop-down list.
  - Enter the password or other security details.
  - Click Connect.

Connect to mobile broadband

- You can set up a connection to a cellular (3G) network with your computer’s built-in 3G modem, your mobile phone, or an Internet stick.
  - If you do not have a built-in 3G modem, connect your phone or Internet stick to a USB port on your computer.
  - Open the system menu from the right side of the top bar.
  - Select Mobile Broadband Off. The Mobile Broadband section of the menu will expand.

    If Mobile Broadband does not appear in the system status menu, ensure that your device is not set to connect as Mass Storage.
  - Select Connect. If you are connecting for the first time, Set up a Mobile Broadband Connection wizard is launched. The opening screen displays a list of required information. Click Next.

Connect to mobile broadband

- Choose your provider’s country or region from the list. Click Next.
- Choose your provider from the list. Click Next.
- Select a plan according to the type of device you are connecting. This will determine the Access Point Name. Click Next.
- Confirm the settings you have selected by clicking Apply. The wizard will close and the Network panel will display the properties of your connection.

Some phones have a setting called USB tethering that requires no setup on the computer. When the setting is activated on the phone, the connection will show up as Ethernet Connected in the system menu and USB ethernet in the network panel.

Networking terms & tips

Find your internal (network) IP address

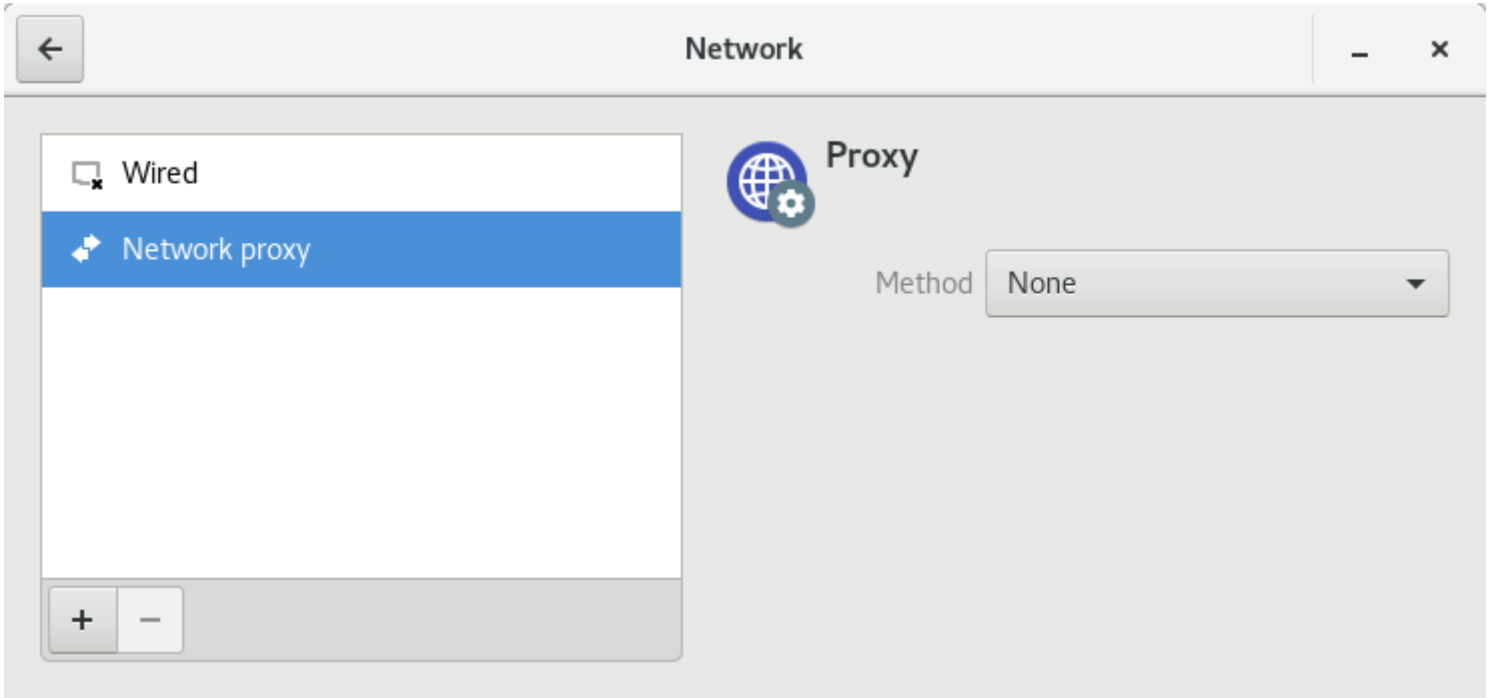
- Open the Activities overview and start typing Network.
- Click on Network to open the panel.
- Choose which connection, Wi-Fi or Wired, from the left pane.
  - The IP address for a wired connection will be displayed on the right.
  - Click the settings button to see the IP address for the wireless network in the Details panel.

Find your external (internet) IP address

- Visit whatismyipaddress.com.
- The site will display your external IP address for you.

Networking terms & tips

- **Define proxy settings**
  - Open the Activities overview and start typing Network.
  - Click on Network to open the panel.
  - Select Network proxy from the list on the left.



Networking terms & tips

- Choose which proxy method you want to use from:
  - None

    The applications will use a direct connection to fetch the content from the web.
  - Manual

    For each proxied protocol, define the address of a proxy and port for the protocols. The protocols are HTTP, HTTPS, FTP and SOCKS.
  - Automatic

    A URL pointing to a resource, which contains the appropriate configuration for your system.

Applications that use the network connection will use your specified proxy settings.

Configuration utilities

ping

- a computer network administration utility used to test the reachability of a host on an Internet Protocol (IP) network.
- It measure the roundtrip time for messages.

  Eg: ping 192.168.31.204

  PING 192.168.31.204 (192.168.31.204) 56(84) bytes of data.

  64 bytes from 192.168.31.204: icmp_seq=1 ttl=63 time=0.984 ms

  64 bytes from 192.168.31.204: icmp_seq=2 ttl=63 time=0.393 ms

  64 bytes from 192.168.31.204: icmp_seq=3 ttl=63 time=0.493 ms

  192.168.31.204 ping statistics

  3 packets transmitted, 3 received, 0% packet loss, time 1998ms

Configuration utilities

traceroute - traces the route taken by packets over an IPv4/IPv6 network

Eg: traceroute google.com

mii-tool

- A key tool which reports the link status of all Ethernet devices on a system and its speed.

  mii-tool

  eth0: negotiated 100baseTxFD, link ok

route - Show / manipulate the IP routing table.

netstat - displays network connections, routing tables and number of network interface statistics.

Used for finding problems in the network and to determine the amount of traffic on the network as a performance measurement.

Interface configuration file

/etc/resolv.conf resolver configuration file

- Tell where to find the name servers.

  # Generated by NetworkManager

  search chennai.cdac.in

  Nameserver 10.184.0.11

- The search key specifies the string which will be appended to an incomplete hostname.
- The nameserver will be used to resolve a given IP address or hostname.

Interface configuration file

/etc/hosts

This file is a simple text file that associates IP addresses with hostnames, one line per IP address.

IP_address canonical_hostname [aliases…]

File contains IP addresses and their corresponding hostnames.

When your system tries to resolve a hostname to an IP address it refers to the /etc/hosts file before using the name servers.

IPAddress	Hostname	Alias
127.0.0.1	localhost	deep.openna.com
208.164.186.1	deep.openna.com	deep
208.164.186.2	mail.openna.com	mail
208.164.186.3	web.openna.com	web

PRINTER MANAGEMENT

Software Installation

Check Cups Package

 # dpkg -l cups

If not installed then run…..

 # apt-get install cups

Check all the printer Drivers are installed

*# dpkg -l printer-driver**

 # dpkg -l foomatic-db-engine

 # dpkg -l hp-ppd

 # dpkg -l openprinting-ppds

Adding a Printer

CUPS has a web interface for setting up a print queue and administering printers.

Three Sections while detecting the printer-driver

1. Local Printers

   -printers which are usually attached to the machine you are using(can be a serial port or parallel port printers).

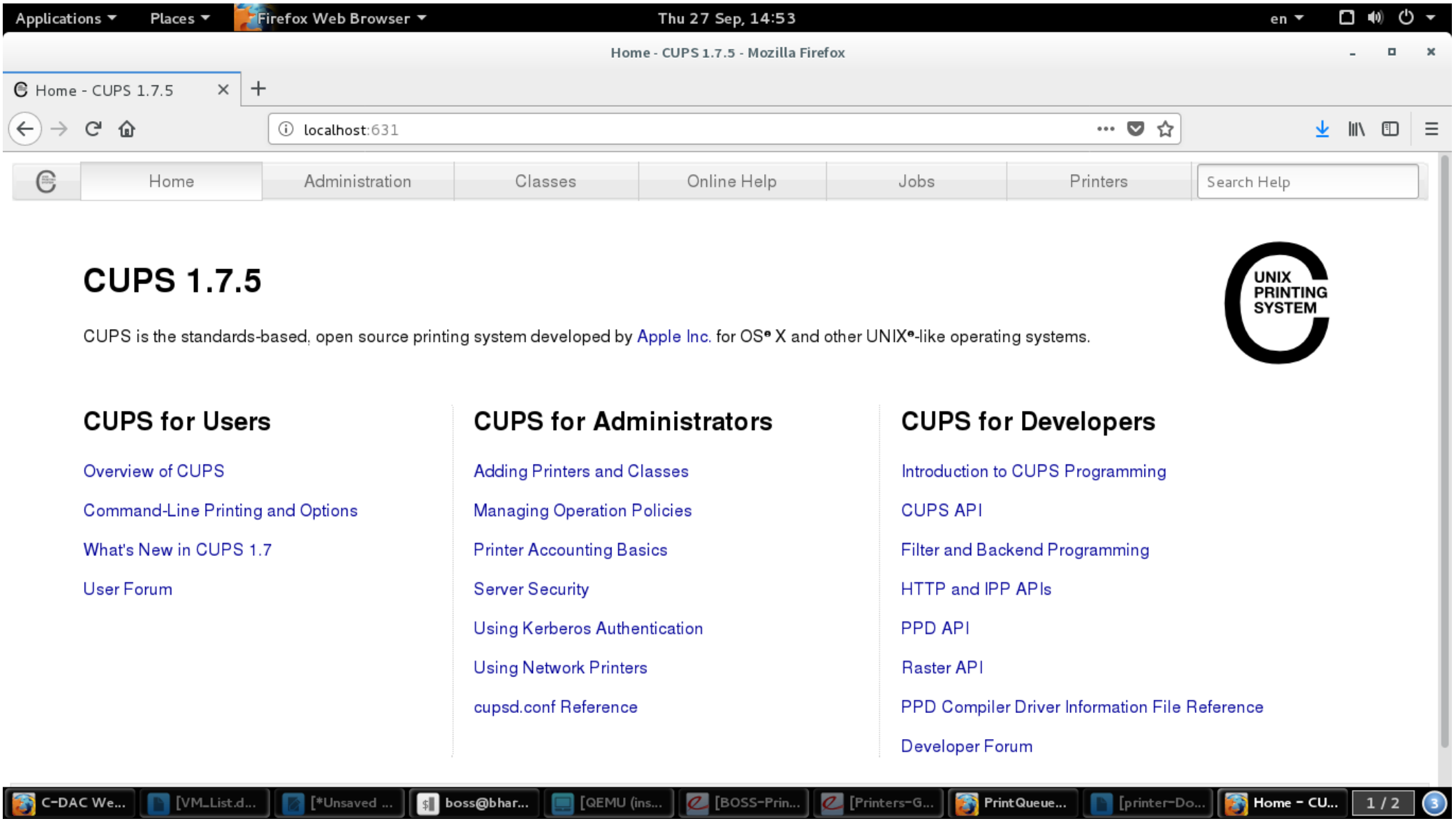
2. Discovered on Local Network Printers

   -printers which have been discovered on the local network.

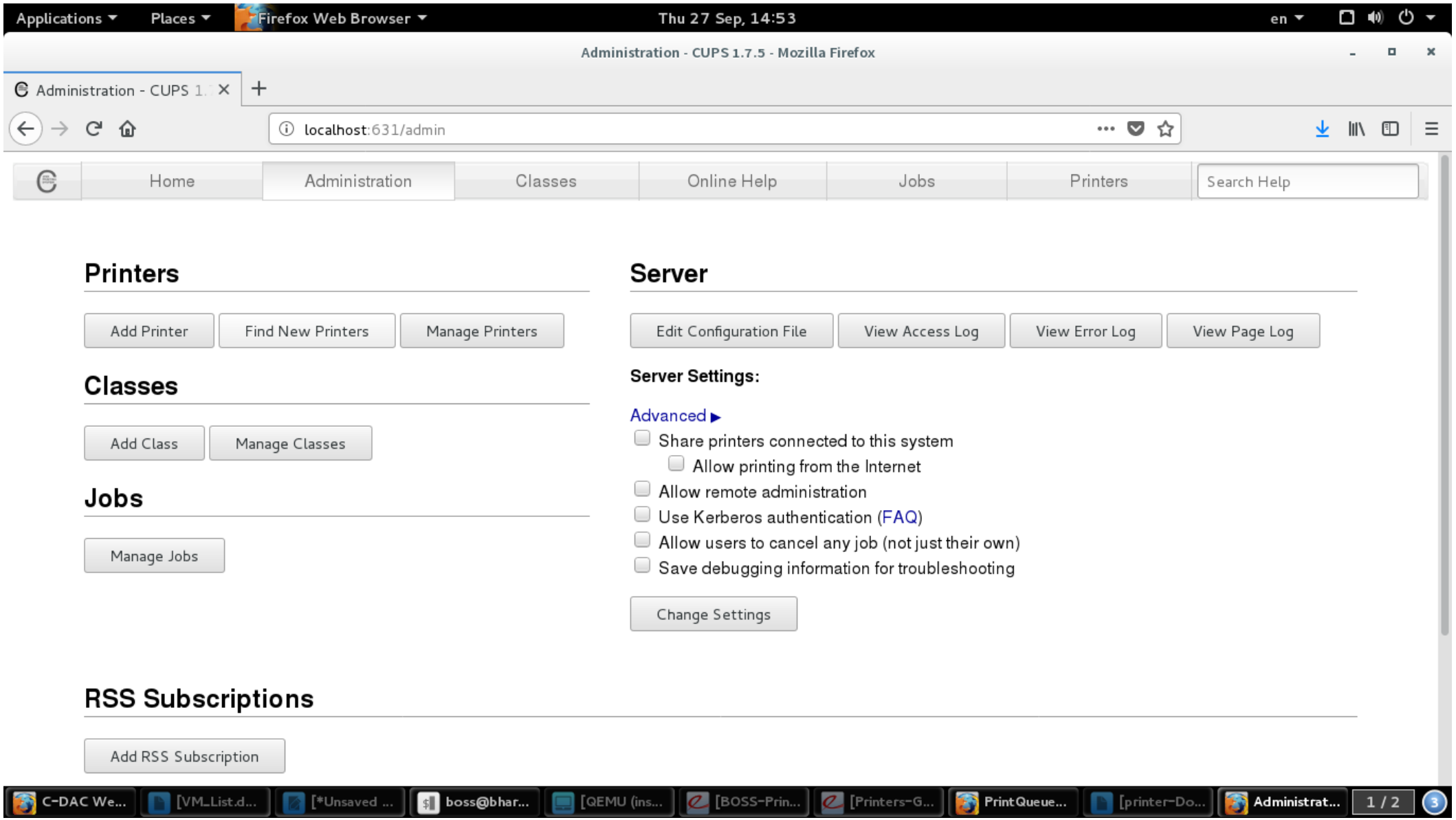
3. Other Network Printers

   -requires you to specify the destination for the remote print queue/printer.

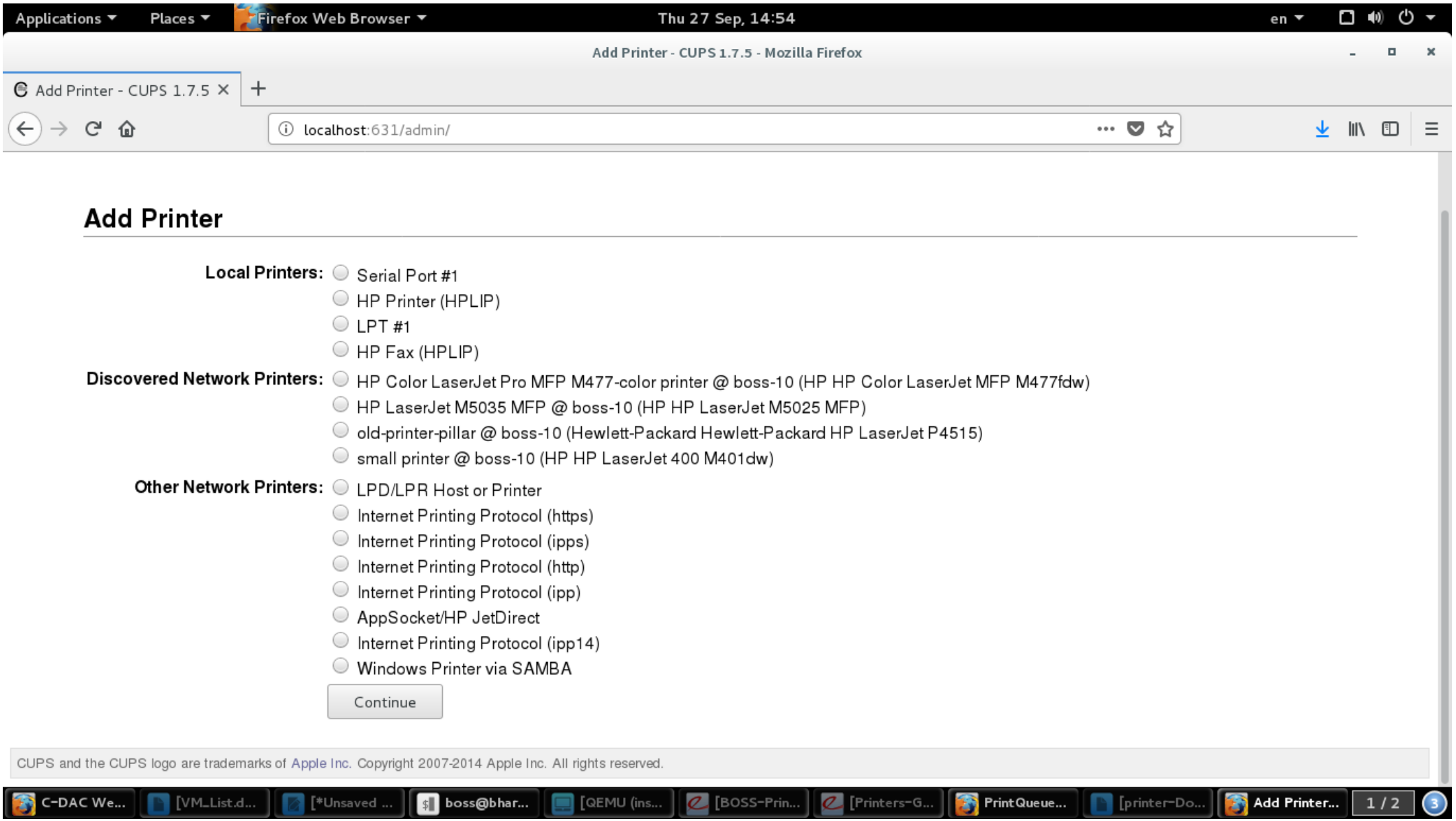
Screen shots of cups web interface



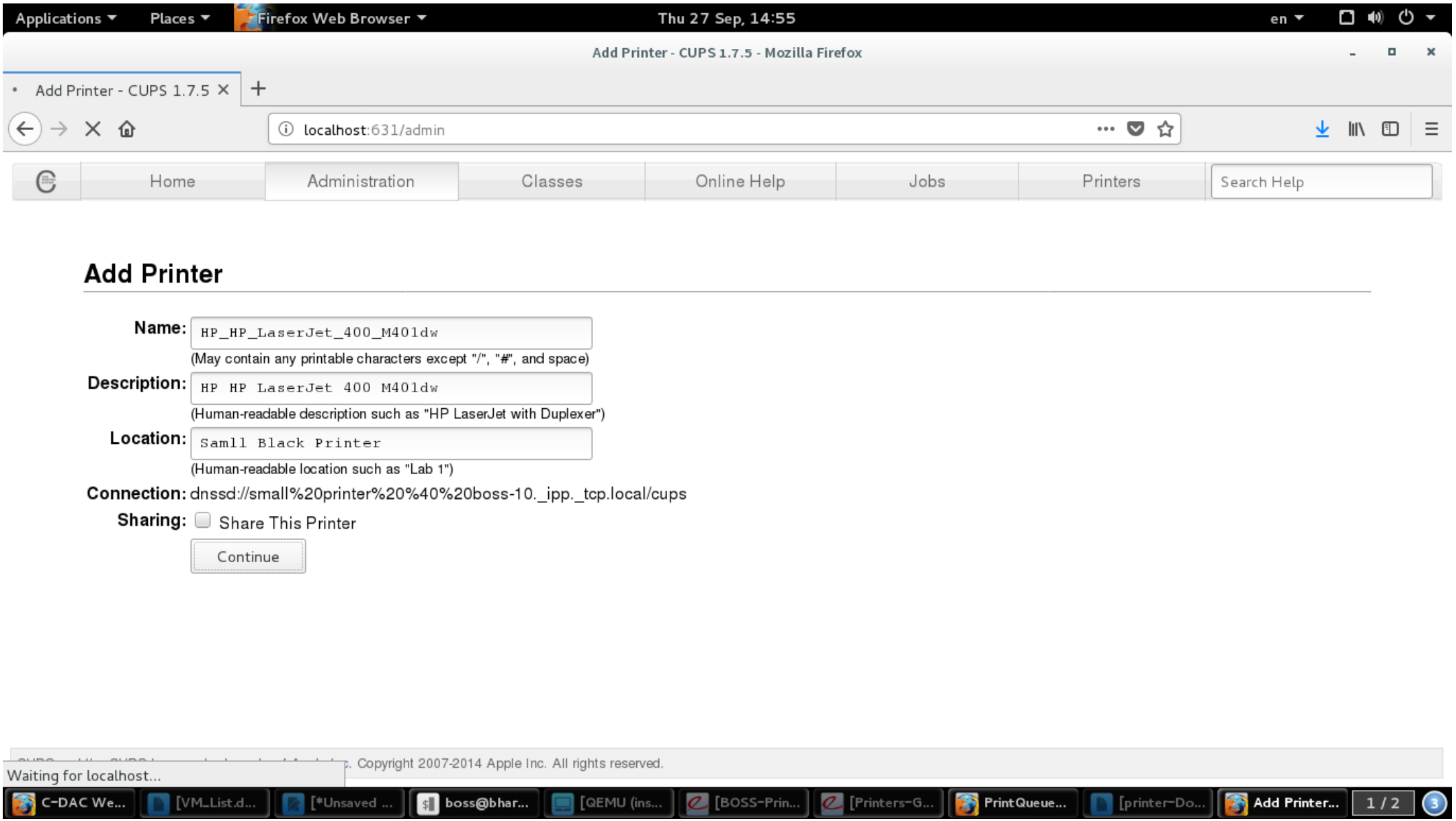
Screen shots of cups web interface



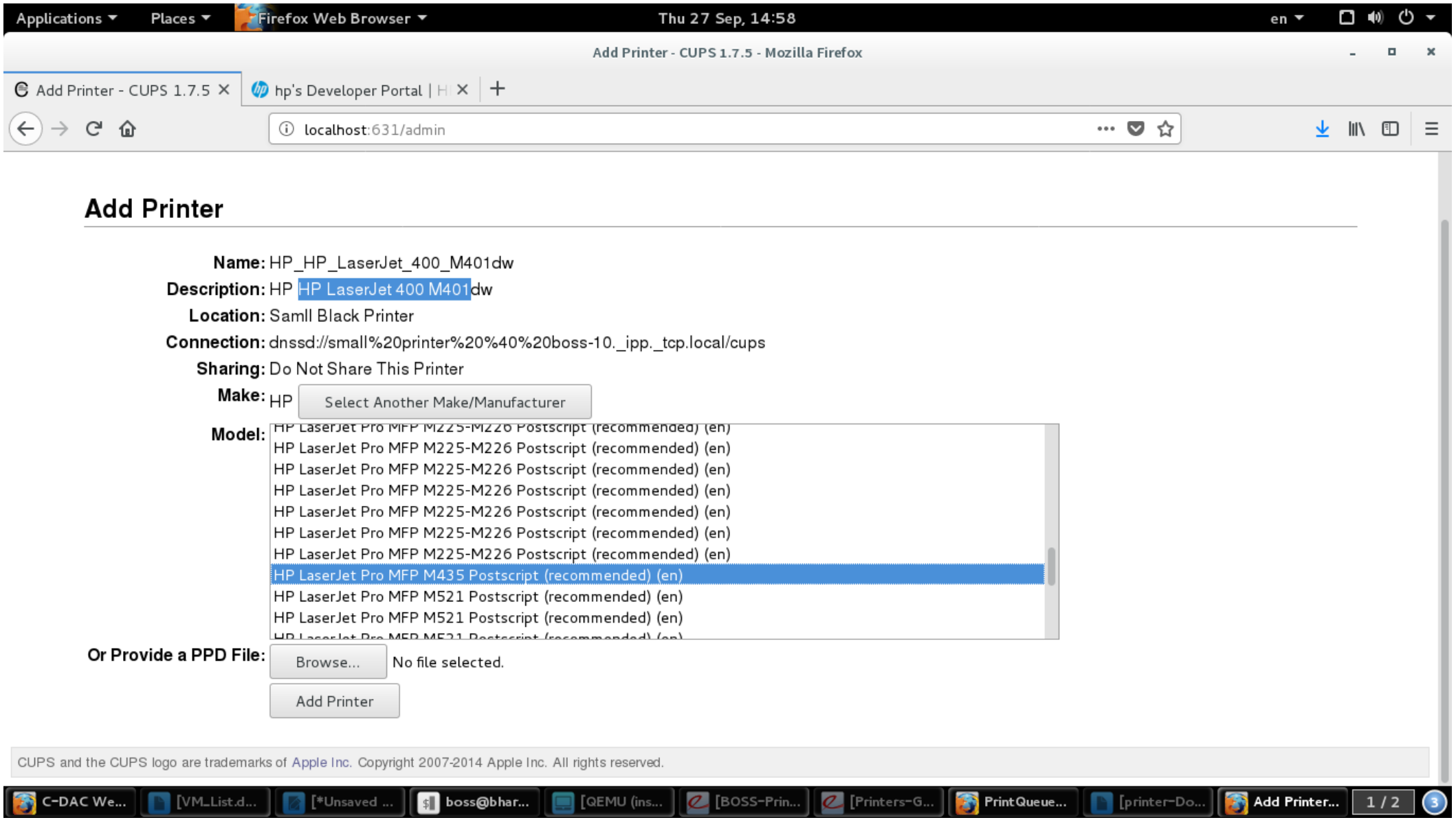
Screen shots of cups web interface



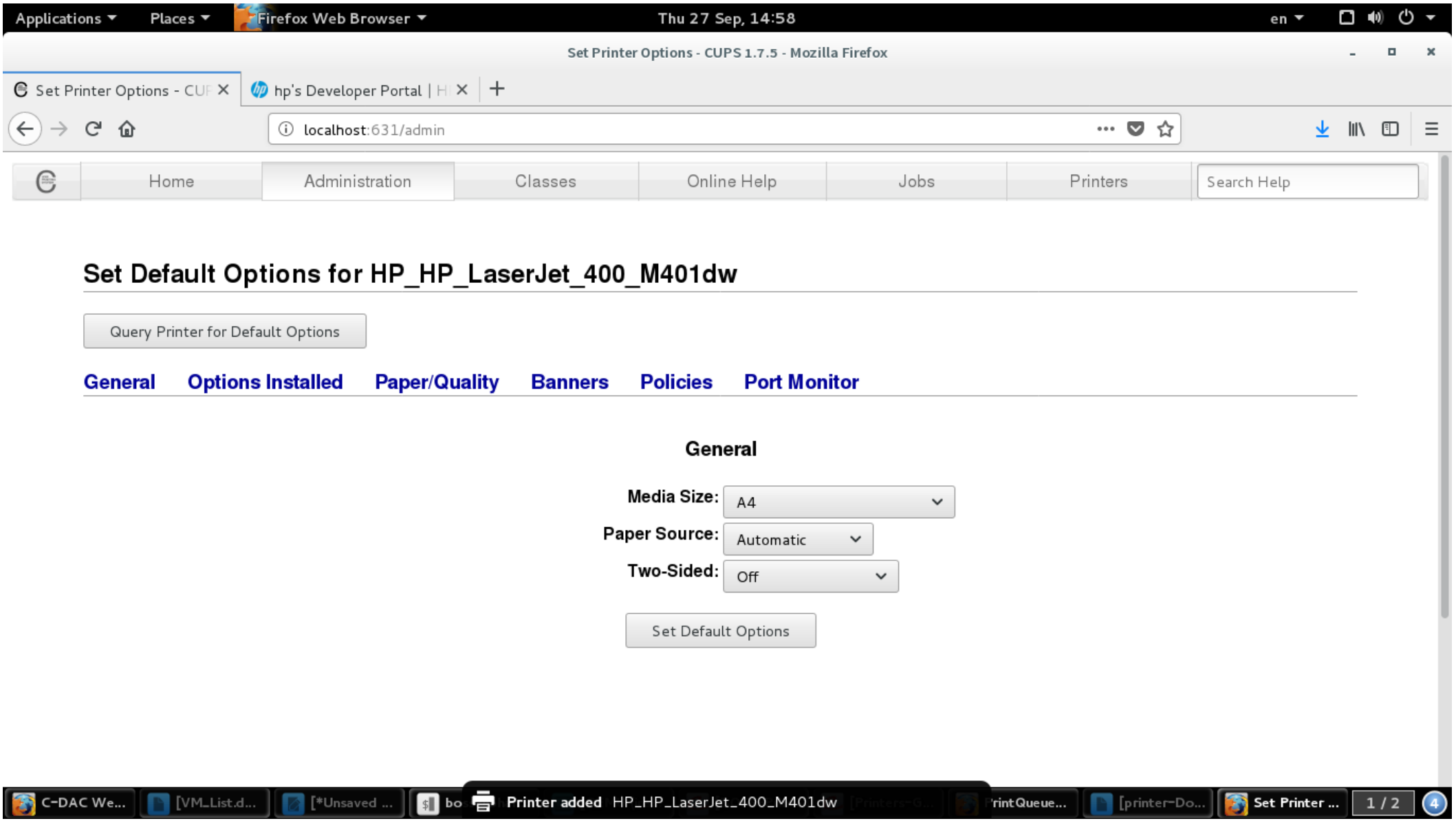
Screen shots of cups web interface



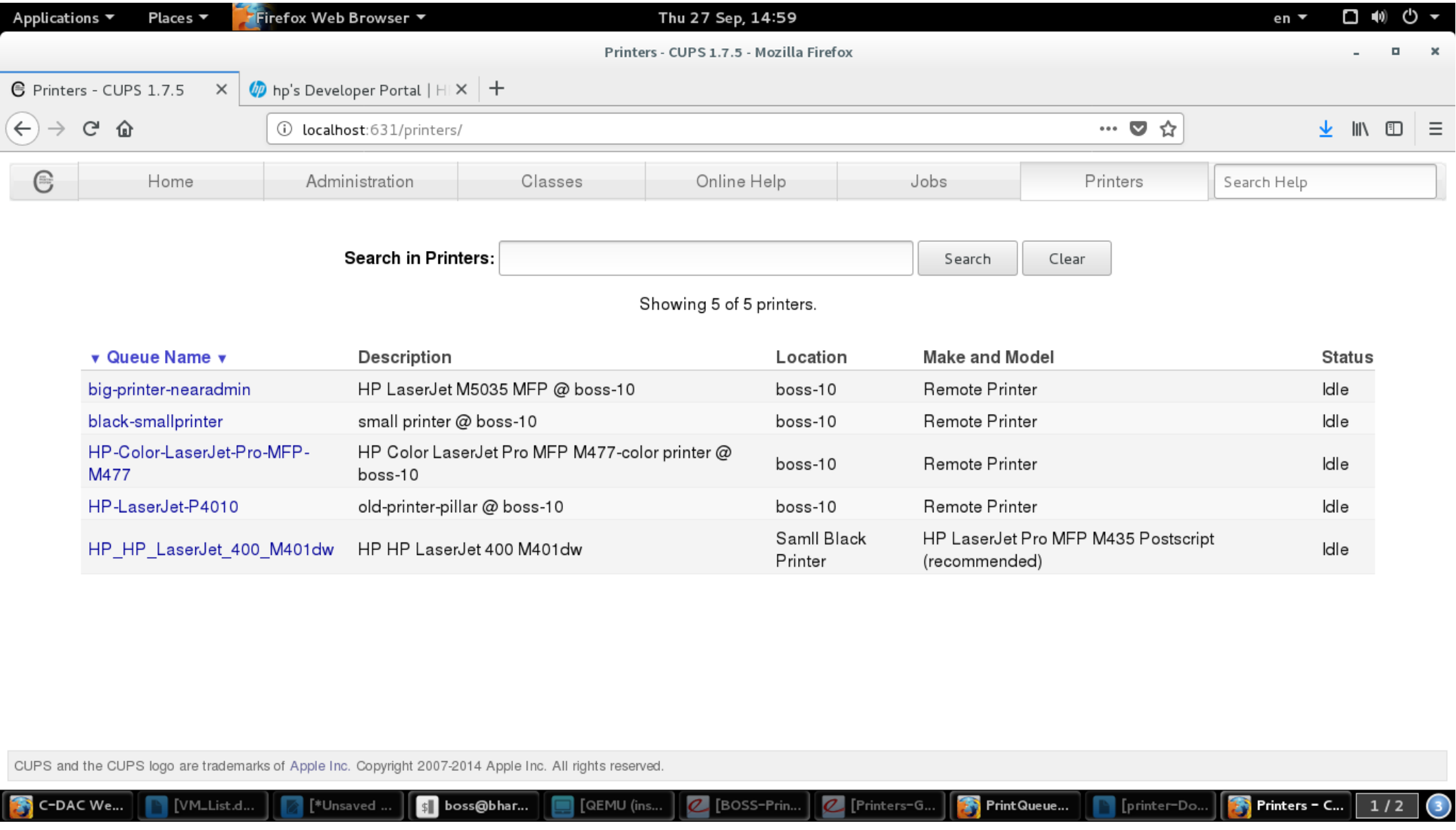
Screen shots of cups web interface



Screen shots of cups web interface



Screen shots of cups web interface



Alternative Configuration Methods and Utilities

1. system-config-printer

    -native printer administration tool

2. Hplip

    -tool which is specifically for HP printers

3. lpadmin

    -command line tool to add printer

    Note: You should know exactly what the printer destination is and what driver to use.

system-config-printer

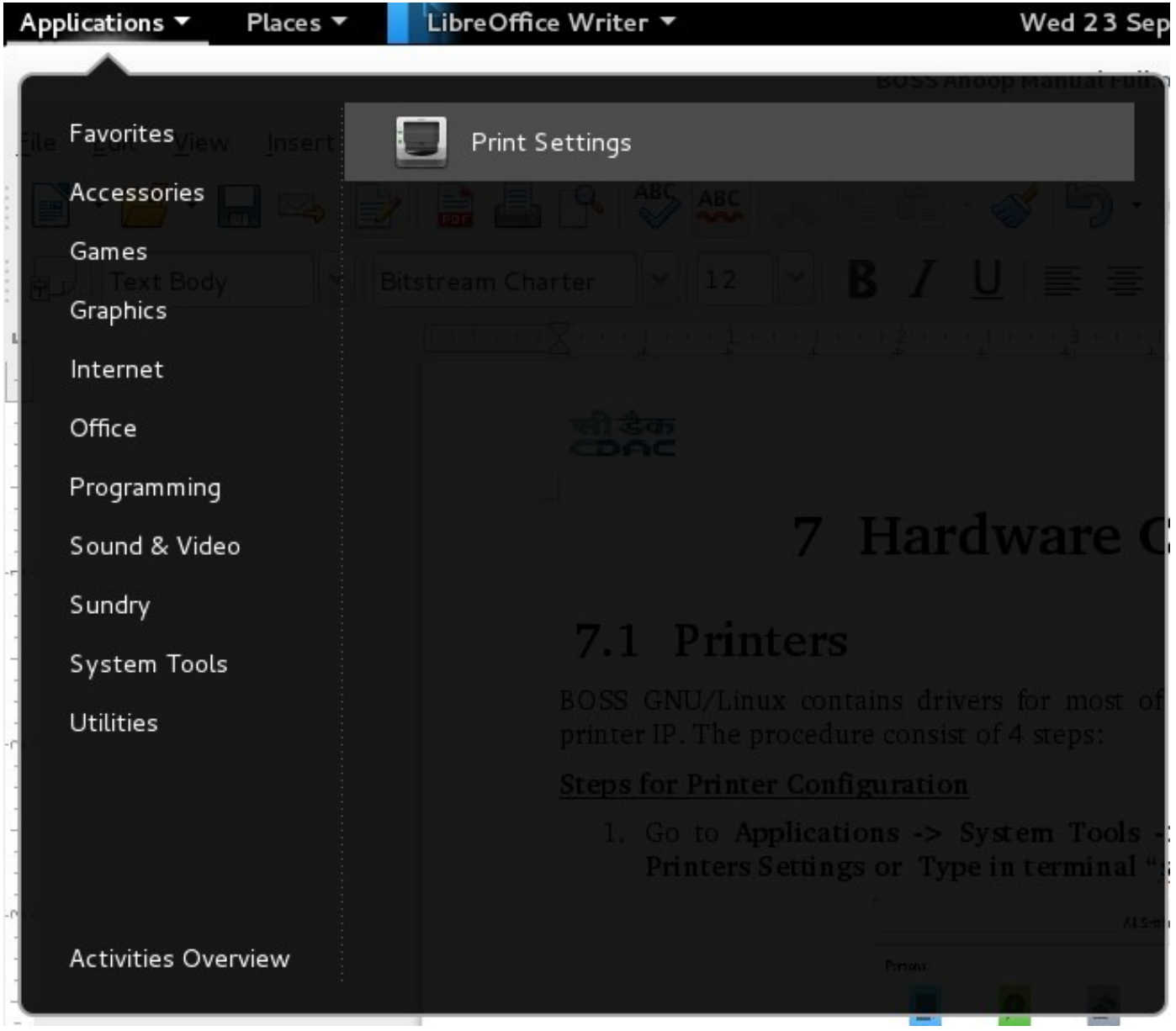
BOSS GNU/Linux contains drivers for most of the Printers, just you have to configure the printer

The procedure consist of 4 steps:

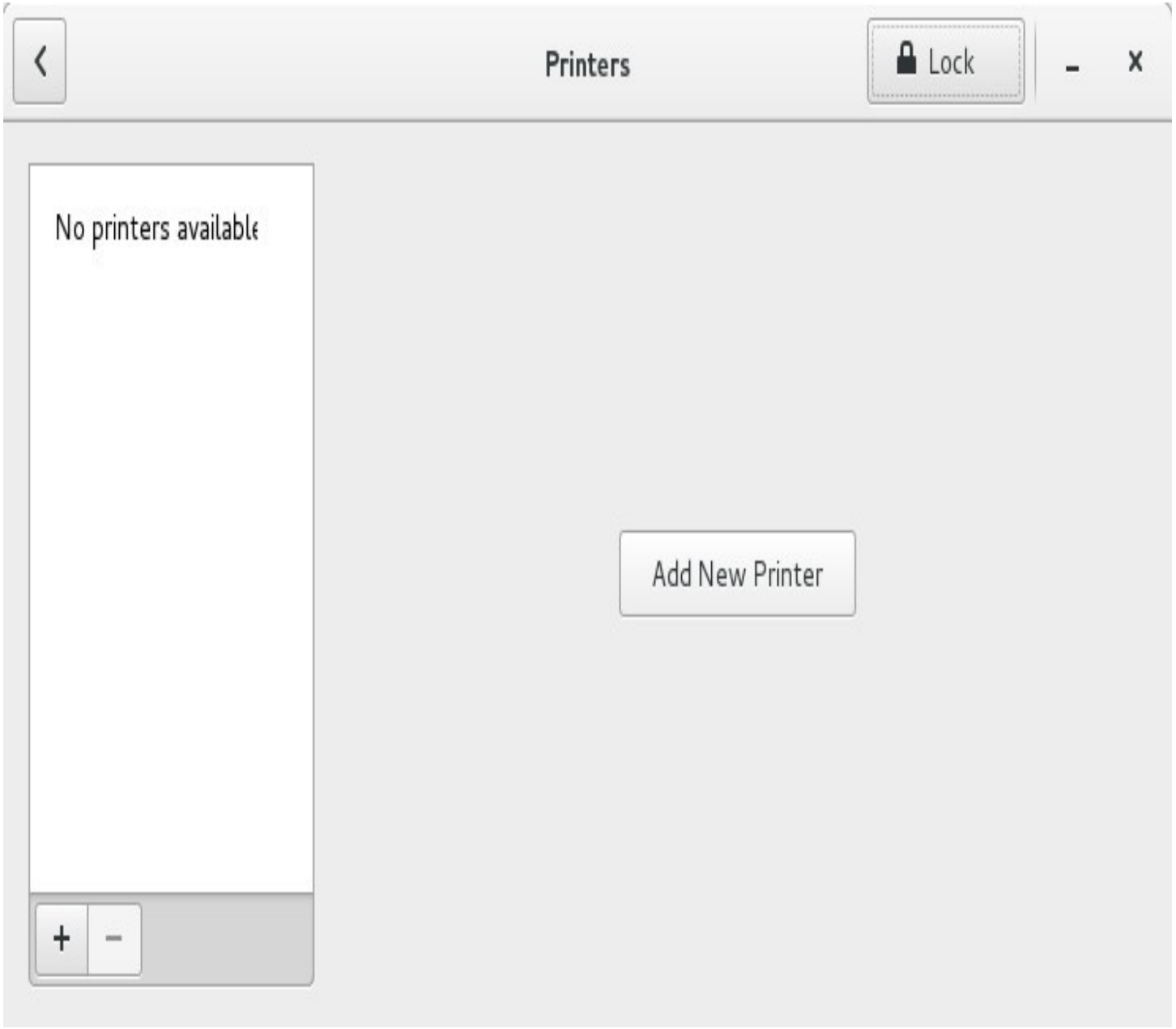
Steps for Printer Configuration

1. Go to Applications -> Sundry -> Printers Settings or Type in terminal “system-config-printer”
2. Click on “Unlock” button and Enter the administrator password to unlock. Then Click the '+' or Click “Add New Printer” to add new printer.
3. Select the the type of the printer. For Network printer enter the IP address, port no and click “Forward”
4. Select the Printer Model and click “Forward”

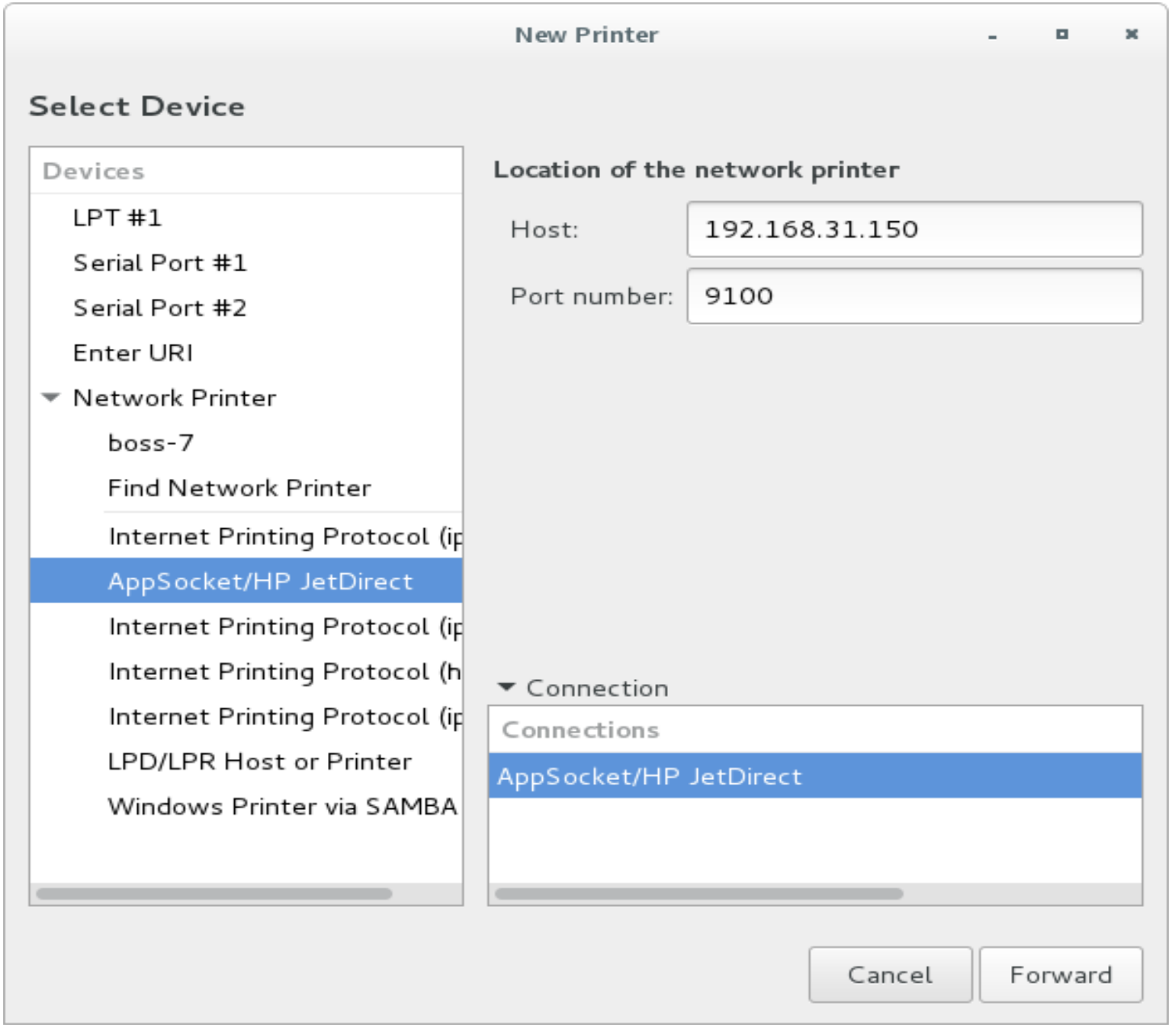
Screenshot for system-config-printer



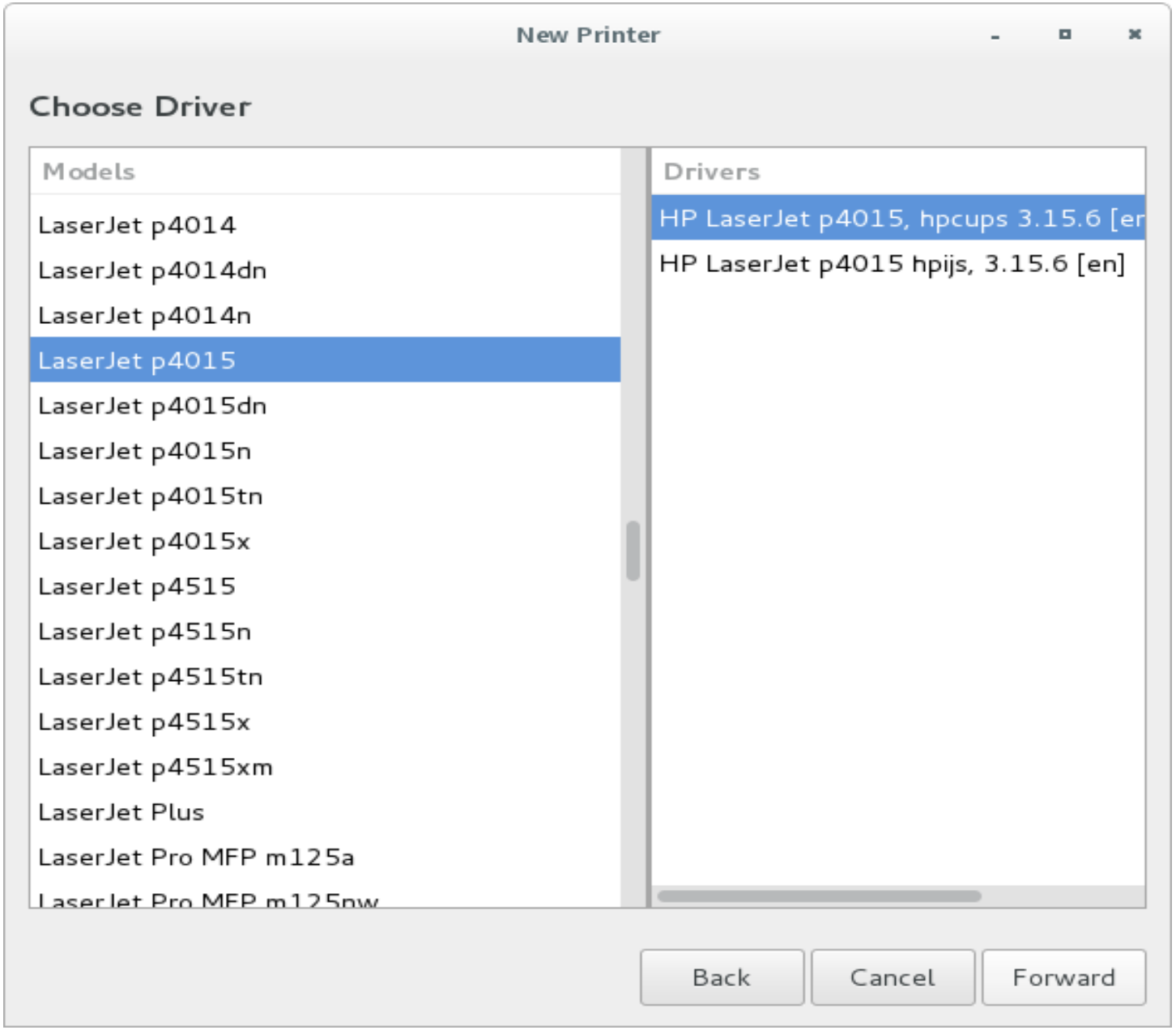
Screenshot for system-config-printer



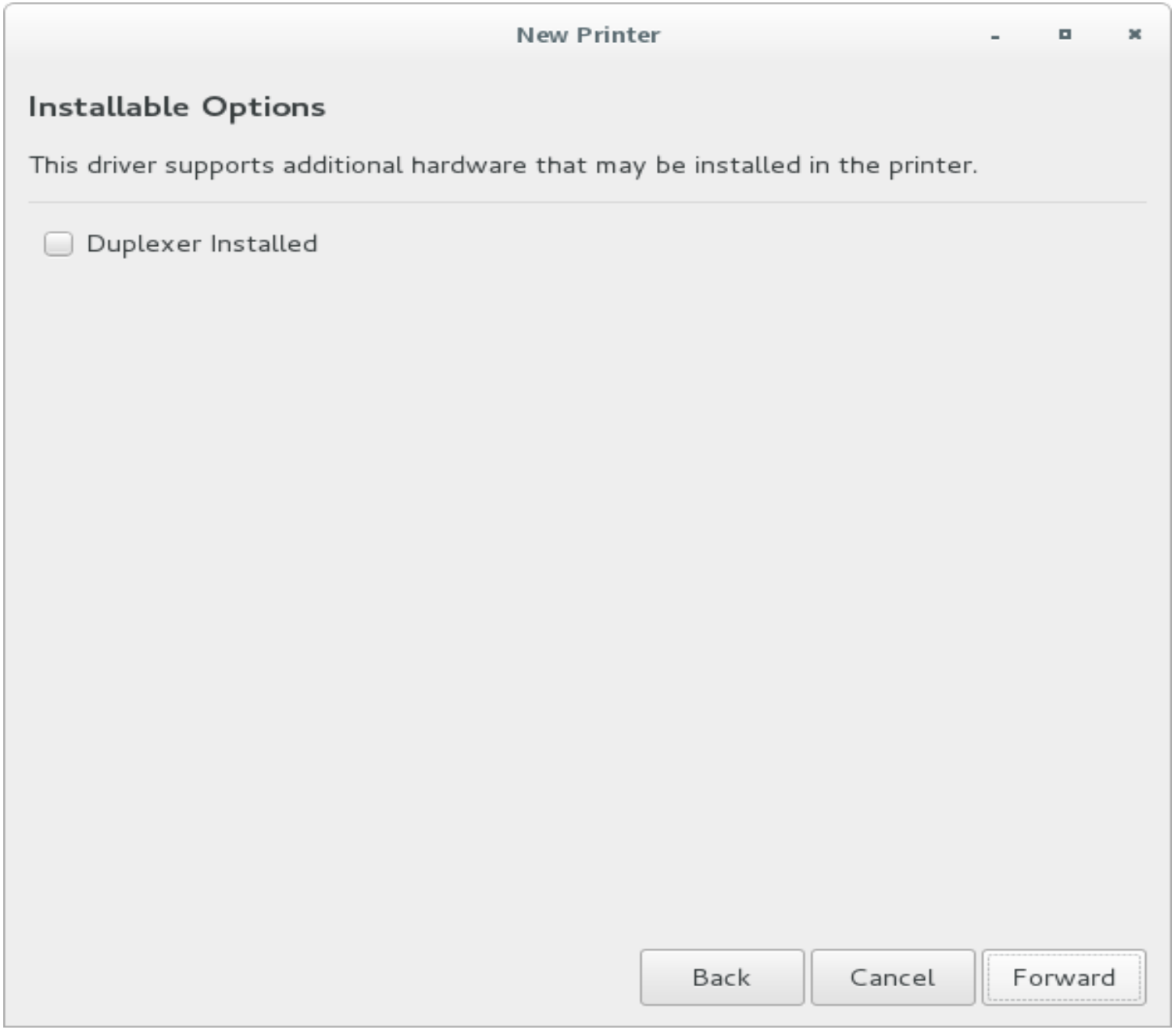
Screenshot for system-config-printer



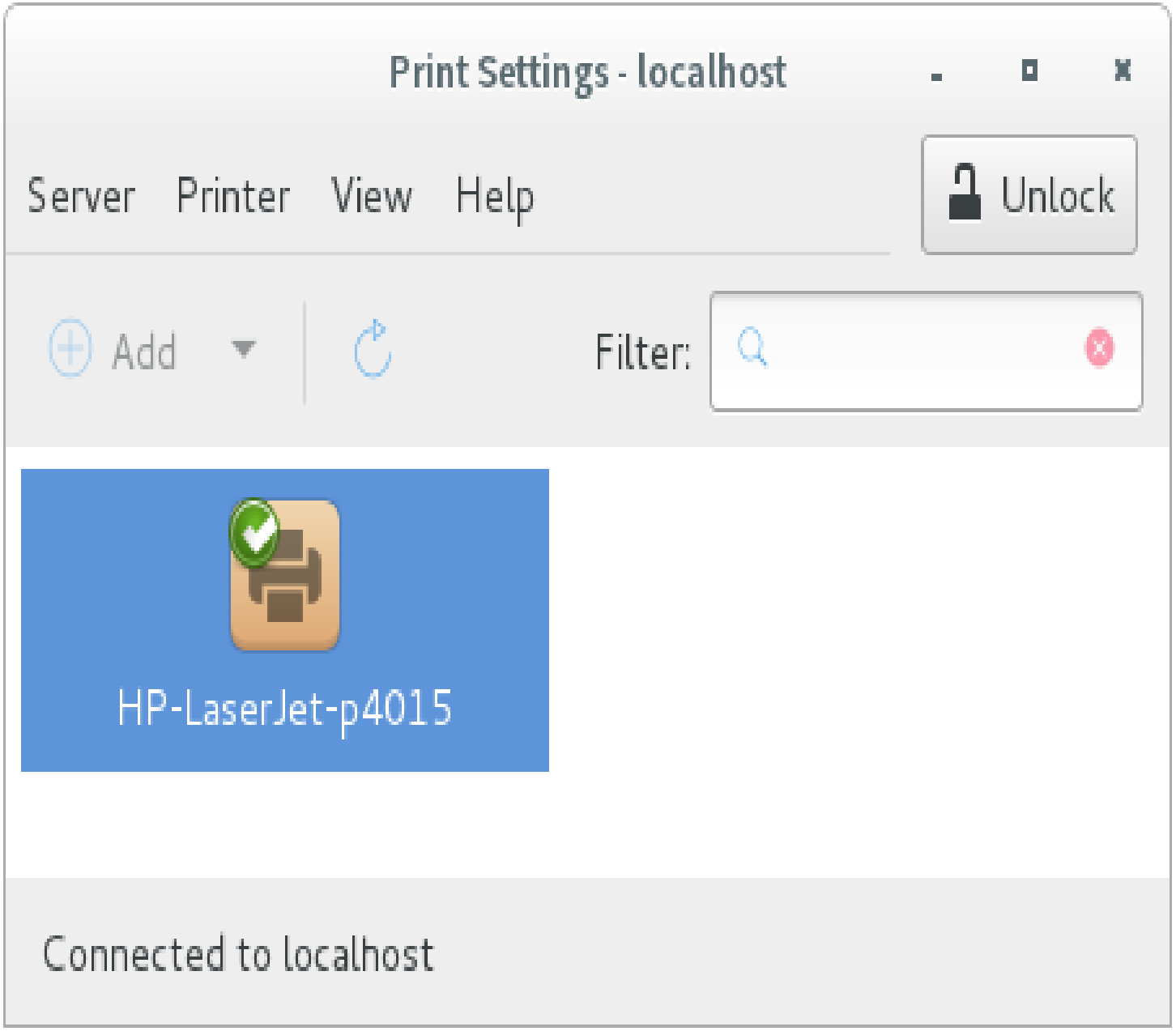
Screenshot for system-config-printer



Screenshot for system-config-printer



Screenshot for system-config-printer



EXTERNAL DRIVERS

Installing Printer drivers externally if not available in BOSS GNU/Linux

Download the PPD files from the below website

http://www.linuxprinting.org/printer_list.cgi

Here you select the printer company and the model from the select box and click on “Show”.

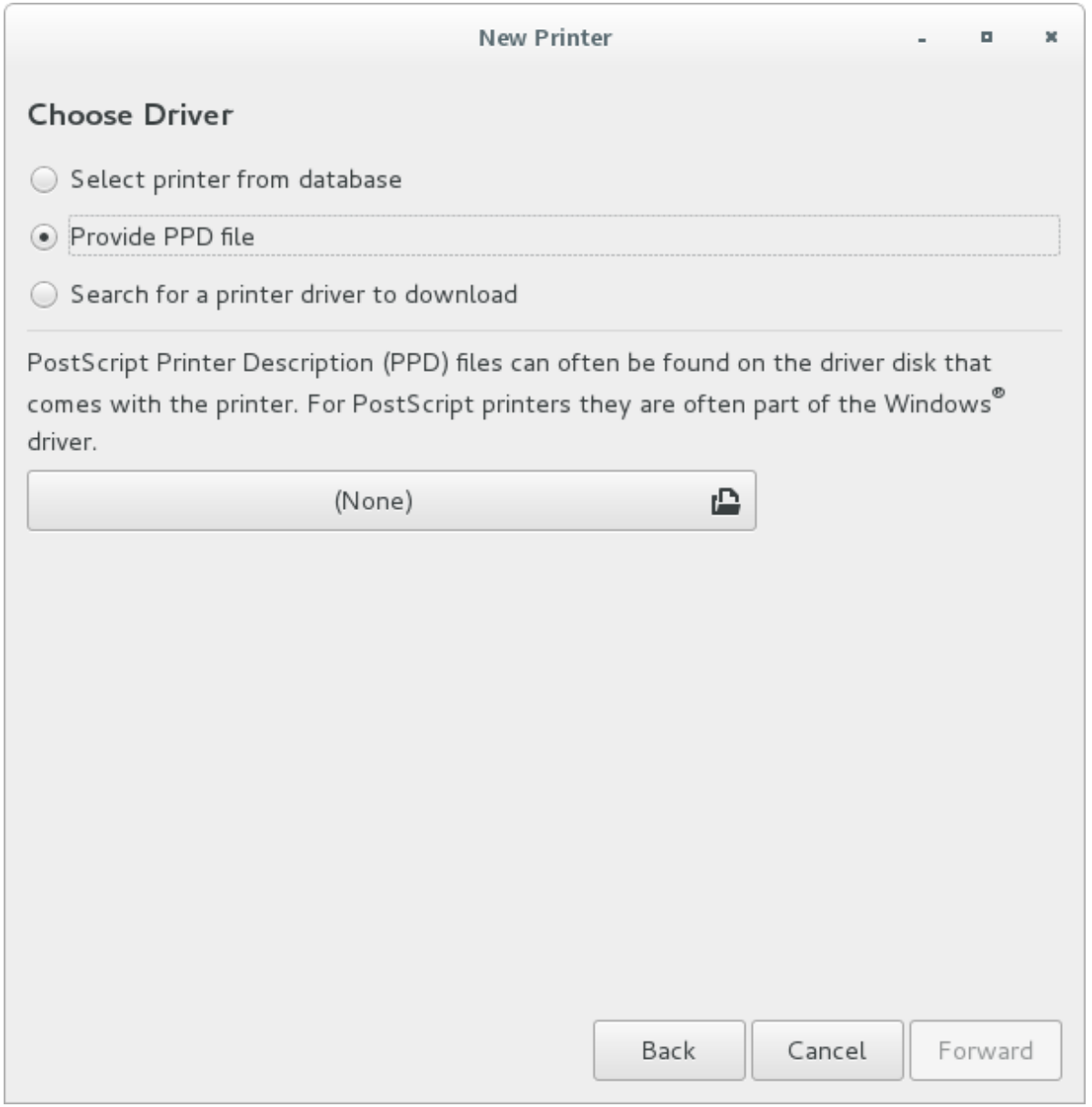
This will follow up a page where you need to search for the Recommended Drivers line and click on“Custom PPD” or “Download PPD” [Differs based on printer].

Save this PPD file in your system.

EXTERNAL DRIVERS

Now Select the Printing option from System –> Administration –> Printing. In the Step 2 of configuration click on “Provide PPD File”. Then click on the open folder select the saved PPD file. This installs your printer divers into your system.

Screeshot for PPD



HP Printer setup

Using “hp-setup” utility

Open the command prompt and run the following command

sudo hp-setup -i (if printer is connected locally)

or

sudo hp-setup -i <ip_address> (if printer is connected via network)

Canon Printer Setup

Step 1: Download and install the drivers

Download the drivers cndrvcups-capt_2.60-1_i386.deb cndrvcups-common_2.60-1_i386.deb

Open terminal and Install the packages

sudo dpkg -i cndrvcups-common_2.60-1_i386.deb cndrvcups-capt_2.60-1_i386.deb

Step 2: Install other postscript fonts & program to reserve ports for the printer

Install portreserve, gsfonts, gsfonts-other, gsfonts-X11

sudo dpkg -i postreserve gsfonts gsfonts-x11 gsfonts-other

Canon Printer Setup

Step 3: Restart the printer

sudo /etc/init.d/cups restart

Step 4: Add printer and start the Cannon Printer daemon.

sudo /usr/sbin/lpadmin -p LBP7200C -m CNCUPSLBP7200CCAPTK.ppd -v ccp://localhost:59787 -E

sudo /usr/sbin/ccpdadmin -p LBP7200C -o /dev/usb/lp0

sudo /etc/init.d/cups restart

sudo /etc/init.d/cups status

Canon Printer Setup

Step 5: Check the printer status

captstatusui -P LBP7200C

If you are seeing the message “Ready to print”, you are done!. Else you may have to restart the system, and repeat all the steps from step 4.

Step 6: Start the printer service for every system startup

sudo gedit /etc/rc.local

Add

/etc/init.d/ccpd start

before the word “exit” , save the file and close

Samsung printer Setup

Samsung printers need Unified Printer drivers from http://www.bchemnet.com/suldr/ .

To install that , open terminal and run

sudo gedit /etc/apt/sources.list

Now along with the existing repository links, add

deb http://www.bchemnet.com/suldr/ debian extra

Save the file and close. In terminal run

sudo wget -O - http://www.bchemnet.com/suldr/suldr.gpg | sudo apt-key add -

sudo apt-get update

sudo apt-get install suld-driver-4.01.17

This will install the necessary packages for Samsung printers. Once it is installed fully, configure the printer using Printer wizard.

ISOC Server

ISOC Server is the centralized administrative web application to monitor and configure all civilnet client machines and users.

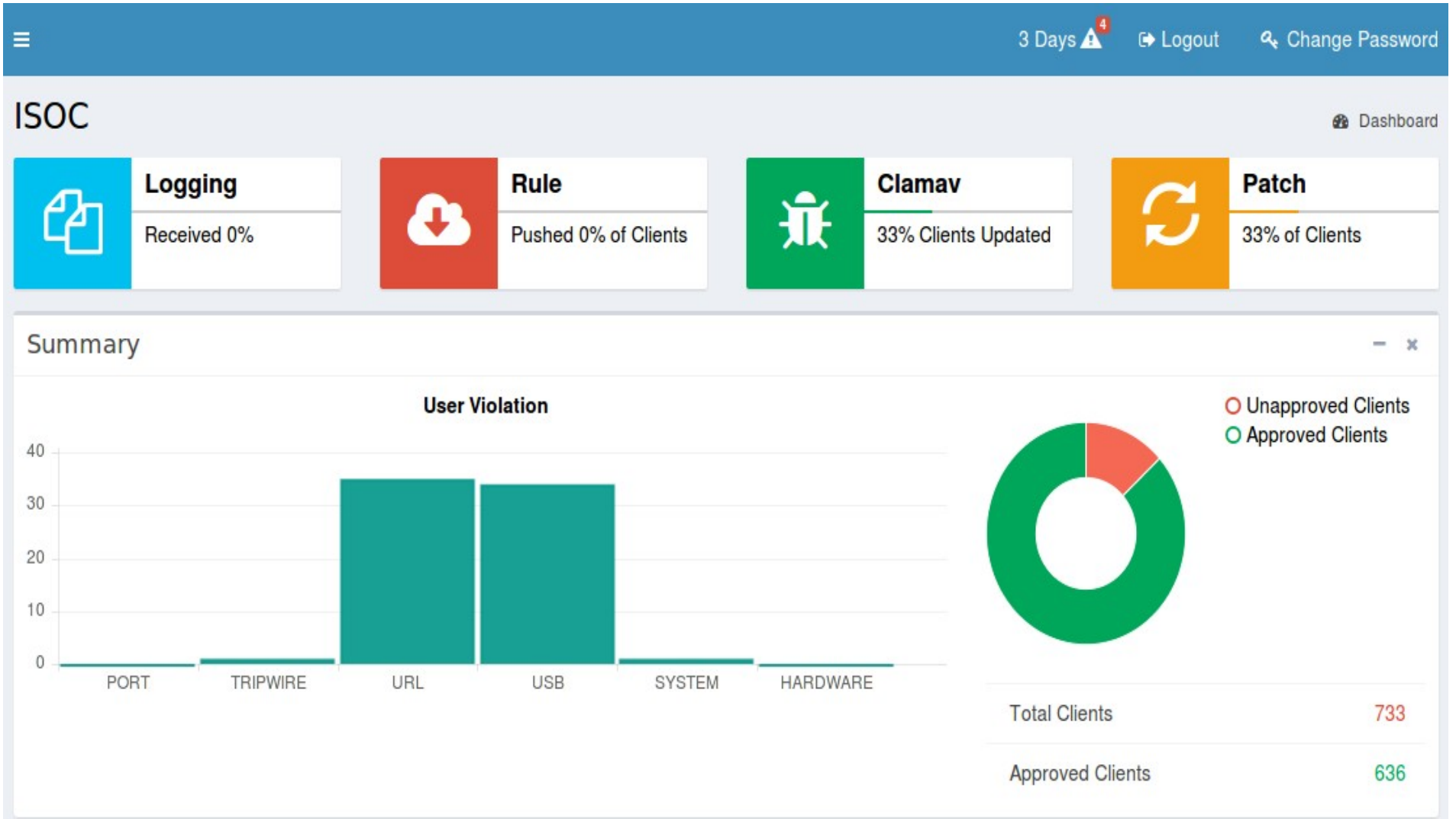
Components of ISOC Server

- Dash Board
- Client Management
- Log Viewer
- Local Administrator Management
- Policy Configuration

ISOC Dashboard

- Summarized Status about client machines
- Client Anti virus & Patch update status
- Clients Registration status
- Information about violation done by client

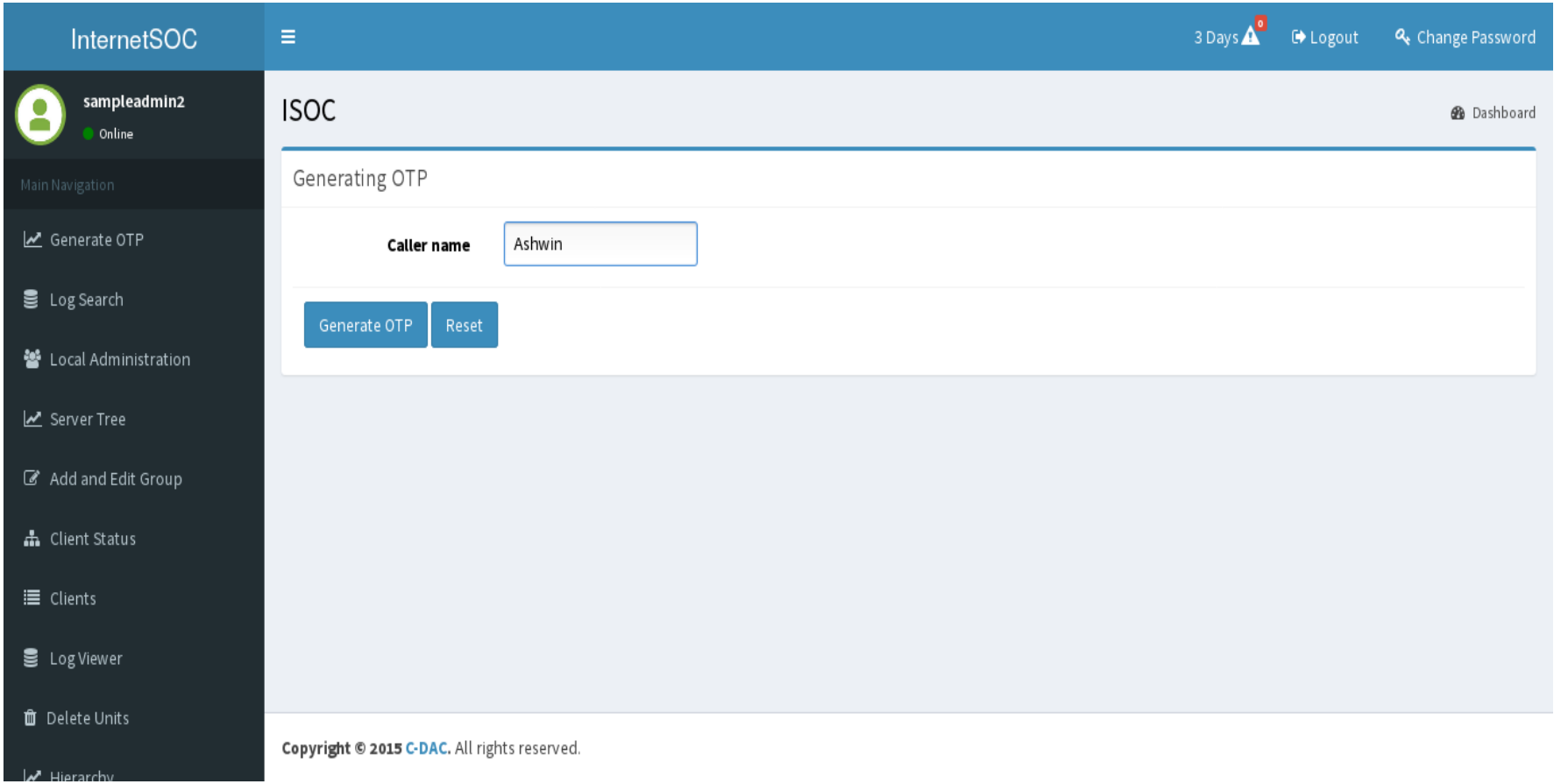
ISOC Dashboard



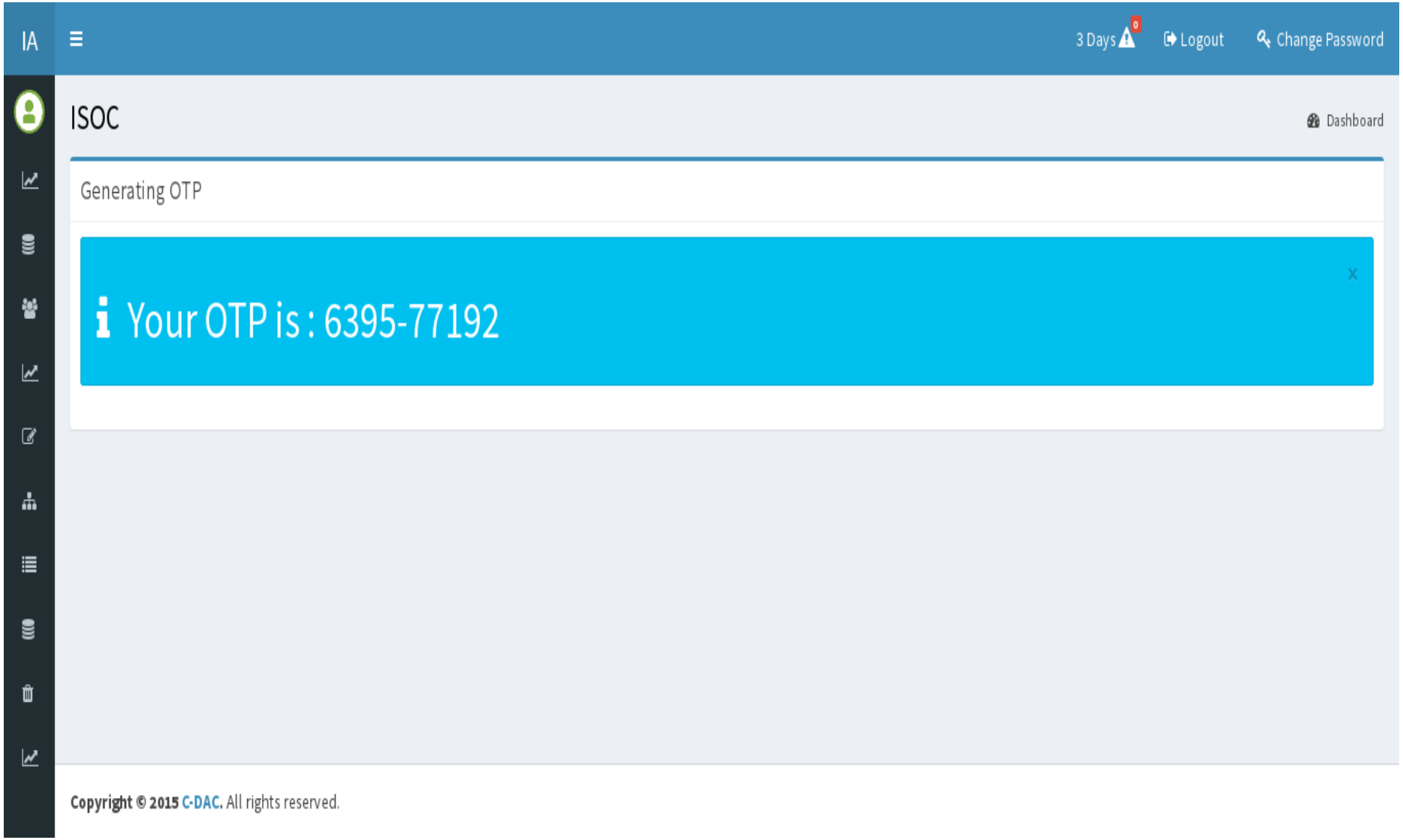
Client Management

- Army BOSS civilnet clients are should register with ISOC server
- New civilnet client computer registered with ISOC using unique identification number as One Time Password (OTP)
- OTP must be generated by unit's ISOC administrator only
- OTP is 9 digit unique identification number to authentic client with server while registration
- System Admin / System Engineer should get OTP from concern unit administrator before starting registration
- Caller name is user name,who requesting OTP to register client machine.
- Clients Log ,Clamav,Rule /Policy and patch update status could be monitored by unit administrator

Generation of OTP



Generation of OTP



Client Deletion

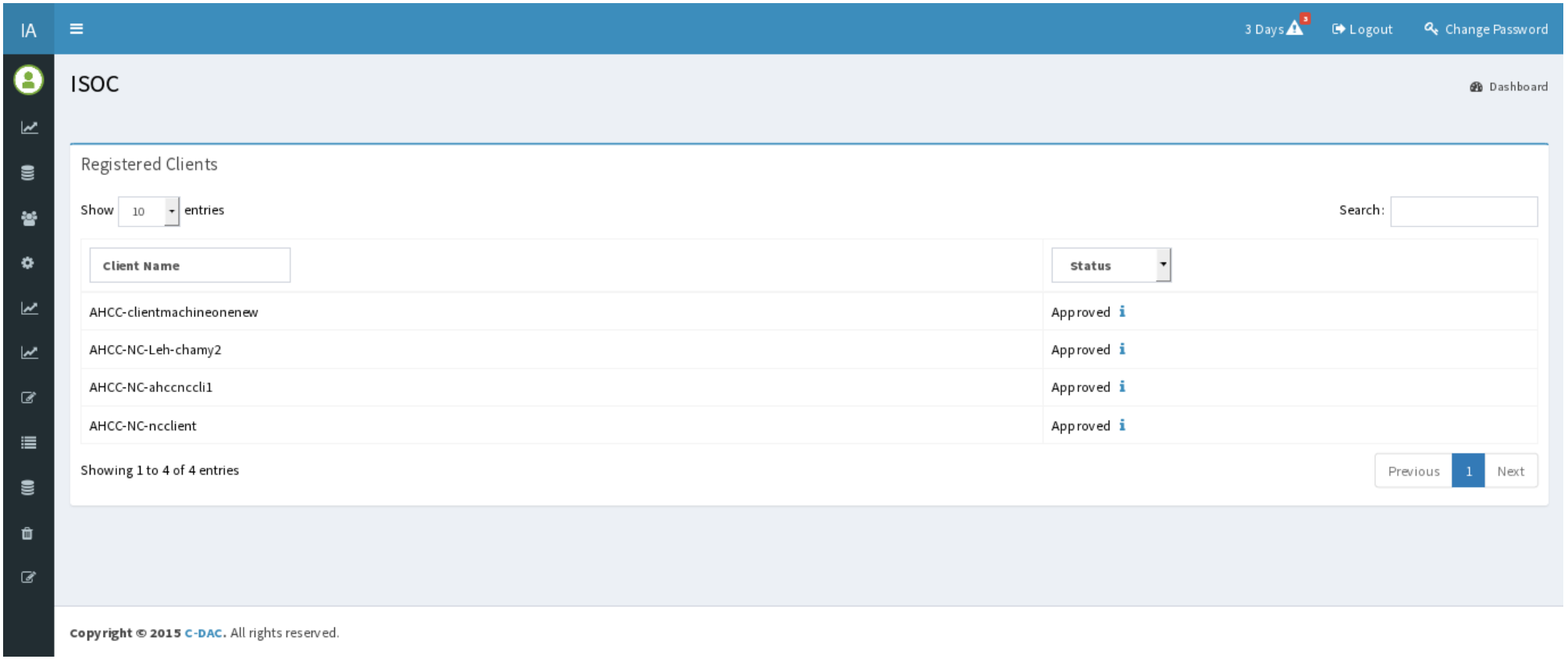
- Only AHCC Super Administrator is responsible to delete unit / client from ISOC server
- If Client deleted by super admin can not be monitor by Unit admin also
- Policy configuration
  - Super Admin user only have privilege to send configuration of policy to all / unit's clients
  - Super Administrator only can block website / service / Install new application

Monitoring Clients

- ISOC server Application having following features to monitor client
  - Clients
    - To view registration status of client
  - Log Viewer
    - To view log entries of client machine / user activities
    - Get Alert Notification to view user violations
  - Hierarchy
    - To monitor sub units and client update status
  - Alerts
    - To monitor what kind of violation happened in client machine

Client Registration Status

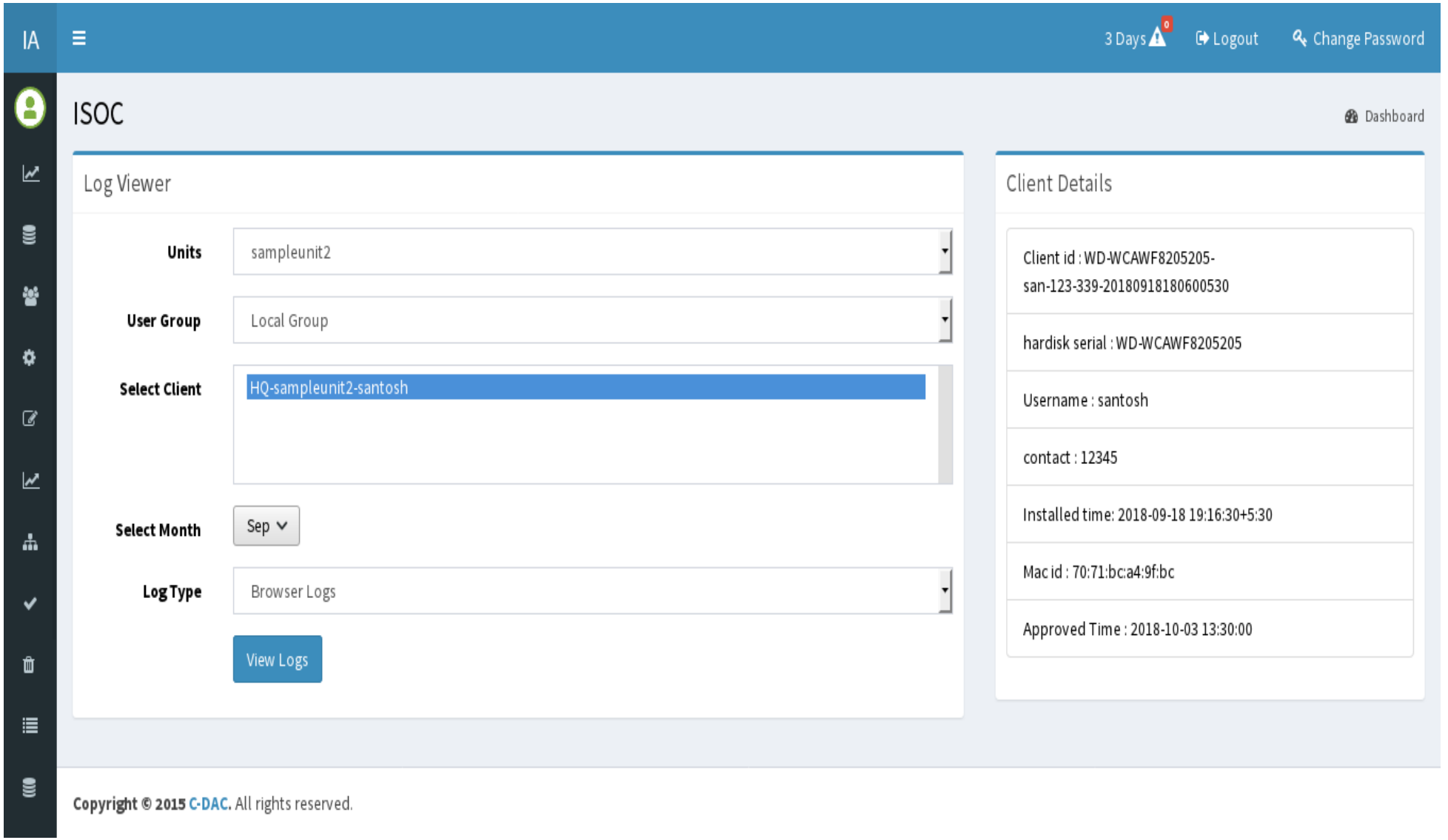
Click on Clients menu option in side menu bar



LOG VIEWER

- Log Viewer to monitor user activities on client machine
- ISOC Server having Two kind of Log viewer
  - Log Viewer to view clients log by month wise
  - Log Search to view client logs by key word searching within period of date
  - Various type of logs collected from clients are System Usage Violation,File integrity check,File System Status,USB device usage,USB Violation,Browser Log,URL Violation,System Upgrade,Last Login,Bad Login Attempts,Antivirus Log,Halt/Reboot Log,Upgrade to Super User ,Service/ Port,etc..

Log Viewer


IA
3 Days
Logout
Change Password
ISOC
Dashboard
Log Viewer
Units
sampleunit2
User Group
Local Group
Select Client
HQ-sampleunit2-santosh
Select Month
Sep
Log Type
Browser Logs
View Logs
Client Details
Client id : WD-WCAWF8205205-san-123-339-20180918180600530
hardisk serial : WD-WCAWF8205205
Username : santosh
contact : 12345
Installed time: 2018-09-18 19:16:30+5:30
Mac id : 70:71:bc:a4:9f:bc
Approved Time : 2018-10-03 13:30:00
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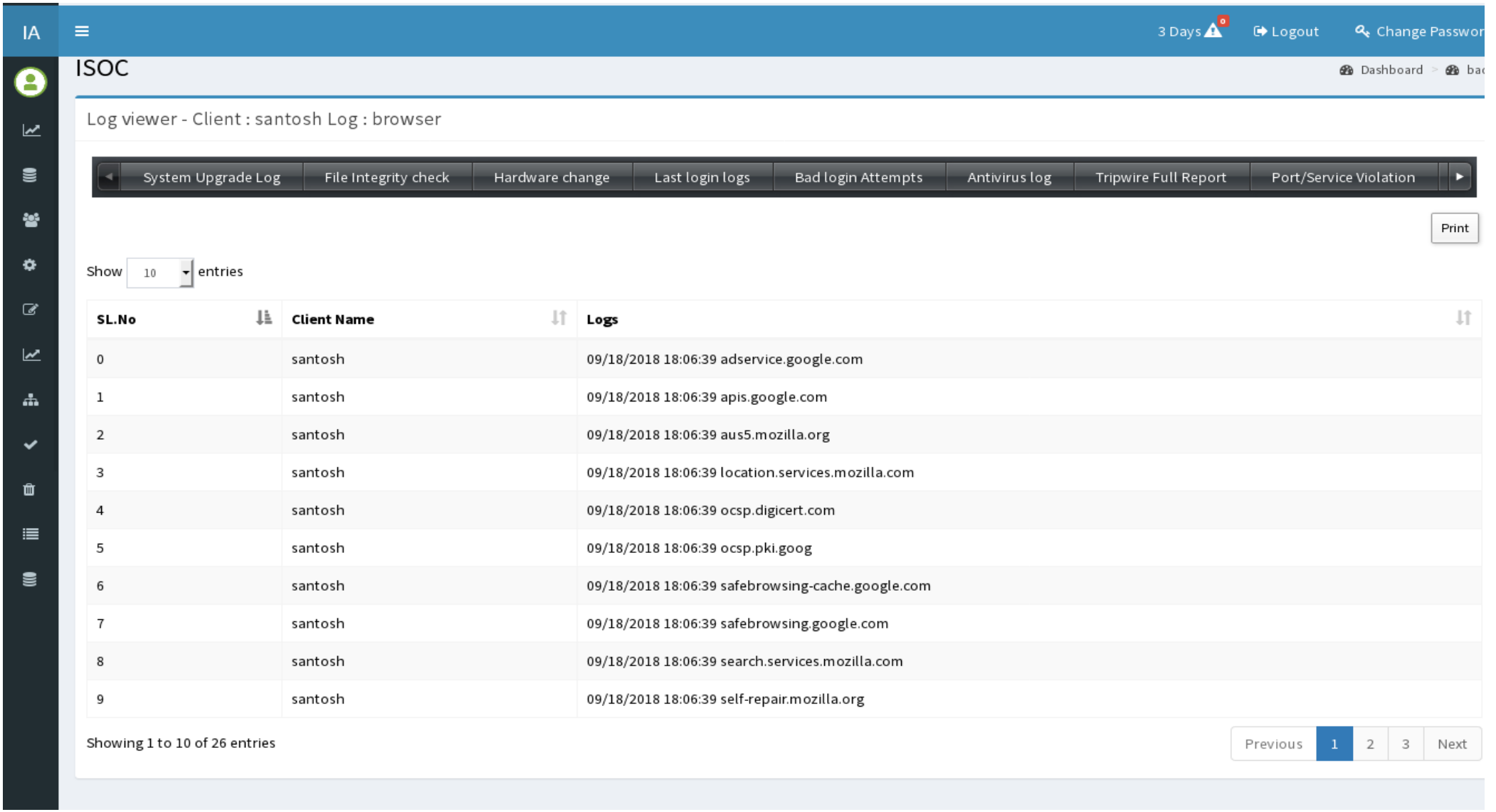
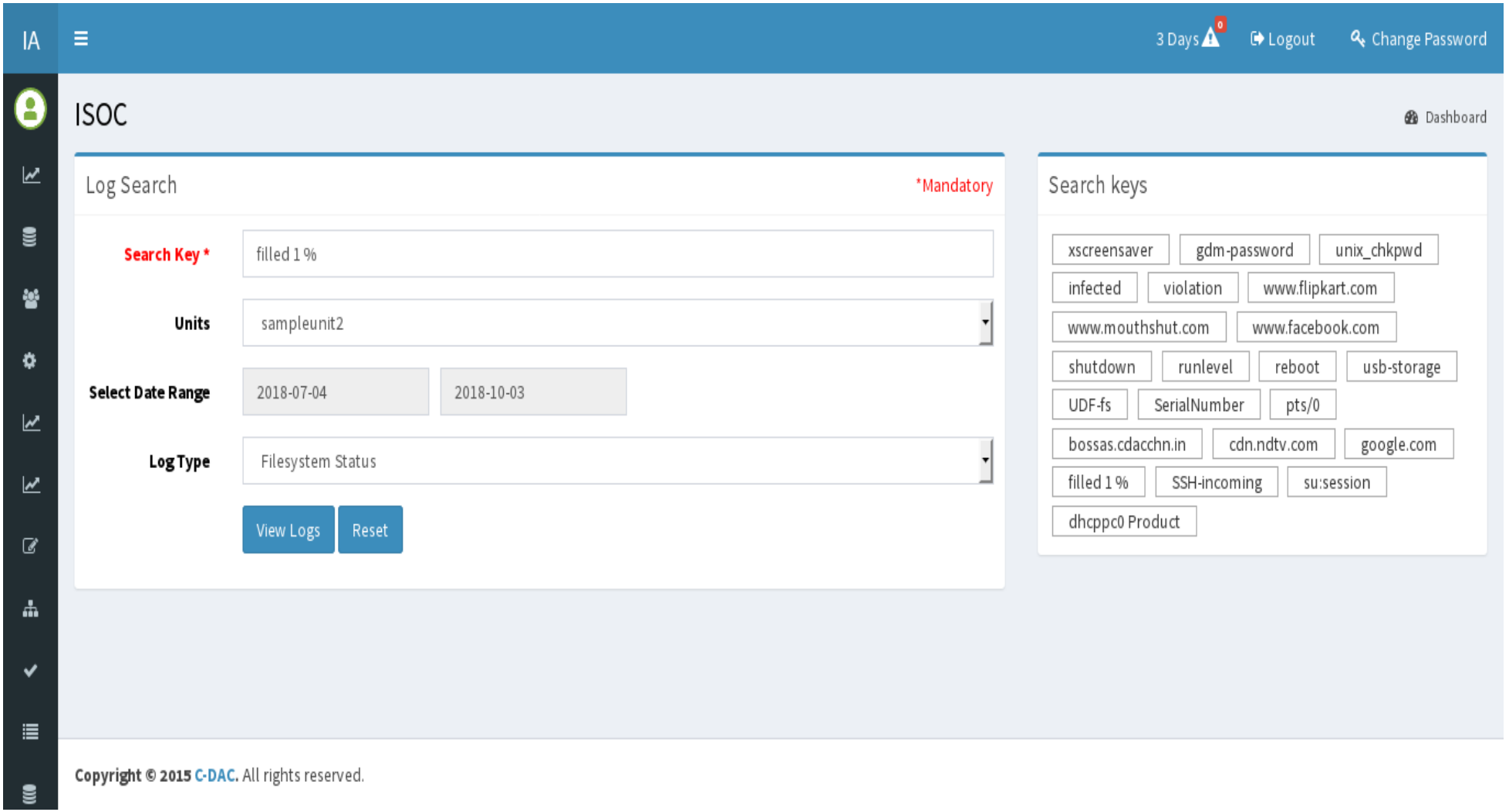
Log Viewer


IA
3 Days
Logout
Change Passwor
ISOC
Dashboard
Log viewer - Client : santosh Log : browser
System Upgrade Log
File Integrity check
Hardware change
Last login logs
Bad login Attempts
Antivirus log
Tripwire Full Report
Port/Service Violation
Print
Show 10 entries
SL.No
Client Name
Logs
0 santosh 09/18/2018 18:06:39 adservice.google.com
1 santosh 09/18/2018 18:06:39 apis.google.com
2 santosh 09/18/2018 18:06:39 aus5.mozilla.org
3 santosh 09/18/2018 18:06:39 location.services.mozilla.com
4 santosh 09/18/2018 18:06:39 ocsp.digicert.com
5 santosh 09/18/2018 18:06:39 ocsp.pki.goog
6 santosh 09/18/2018 18:06:39 safebrowsing-cache.google.com
7 santosh 09/18/2018 18:06:39 safebrowsing.google.com
8 santosh 09/18/2018 18:06:39 search.services.mozilla.com
9 santosh 09/18/2018 18:06:39 self-repair.mozilla.org
Showing 1 to 10 of 26 entries
Previous
1
2
3
Next

Log Search

- Unit Admin also can view log by searching particular type of log using search keyword
- This is advanced feature to view log between two date
- Log Search can be performed upto previous date of searching
- Log search must need Search string and Unit have to be search log entries.

Log Search


IA
3 Days
Logout
Change Password
ISOC
Dashboard
Log Search
*Mandatory
Search Key *
filled 1 %
Units
sampleunit2
Select Date Range
2018-07-04
2018-10-03
Log Type
Filesystem Status
View Logs
Reset
Search keys
xscreensaver
gdm-password
unix_chkpwd
infected
violation
www.flipkart.com
www.mouthshut.com
www.facebook.com
shutdown
runlevel
reboot
usb-storage
UDF-fs
SerialNumber
pts/0
bossas.cdacchn.in
cdn.ndtv.com
google.com
filled 1 %
SSH-incoming
su:session
dhcppc0 Product
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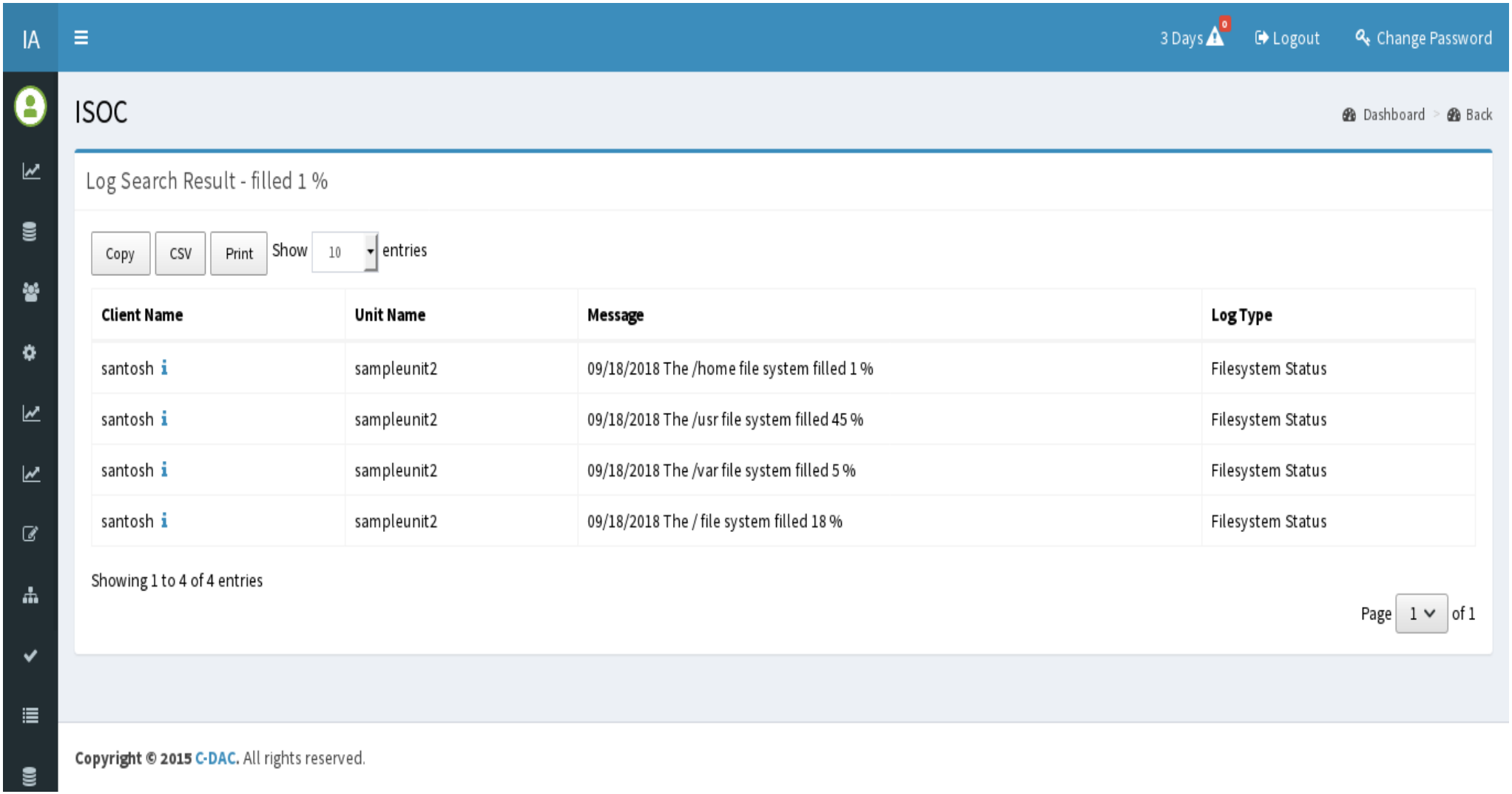
Log Search


IA
3 Days
Logout
Change Password
ISOC
Dashboard
Back
Log Search Result - filled 1 %
Copy
CSV
Print
Show 10 entries
Client Name
Unit Name
Message
Log Type
santosh
sampleunit2
09/18/2018 The /home file system filled 1 %
Filesystem Status
santosh
sampleunit2
09/18/2018 The /usr file system filled 45 %
Filesystem Status
santosh
sampleunit2
09/18/2018 The /var file system filled 5 %
Filesystem Status
santosh
sampleunit2
09/18/2018 The / file system filled 18 %
Filesystem Status
Showing 1 to 4 of 4 entries
Page 1 of 1
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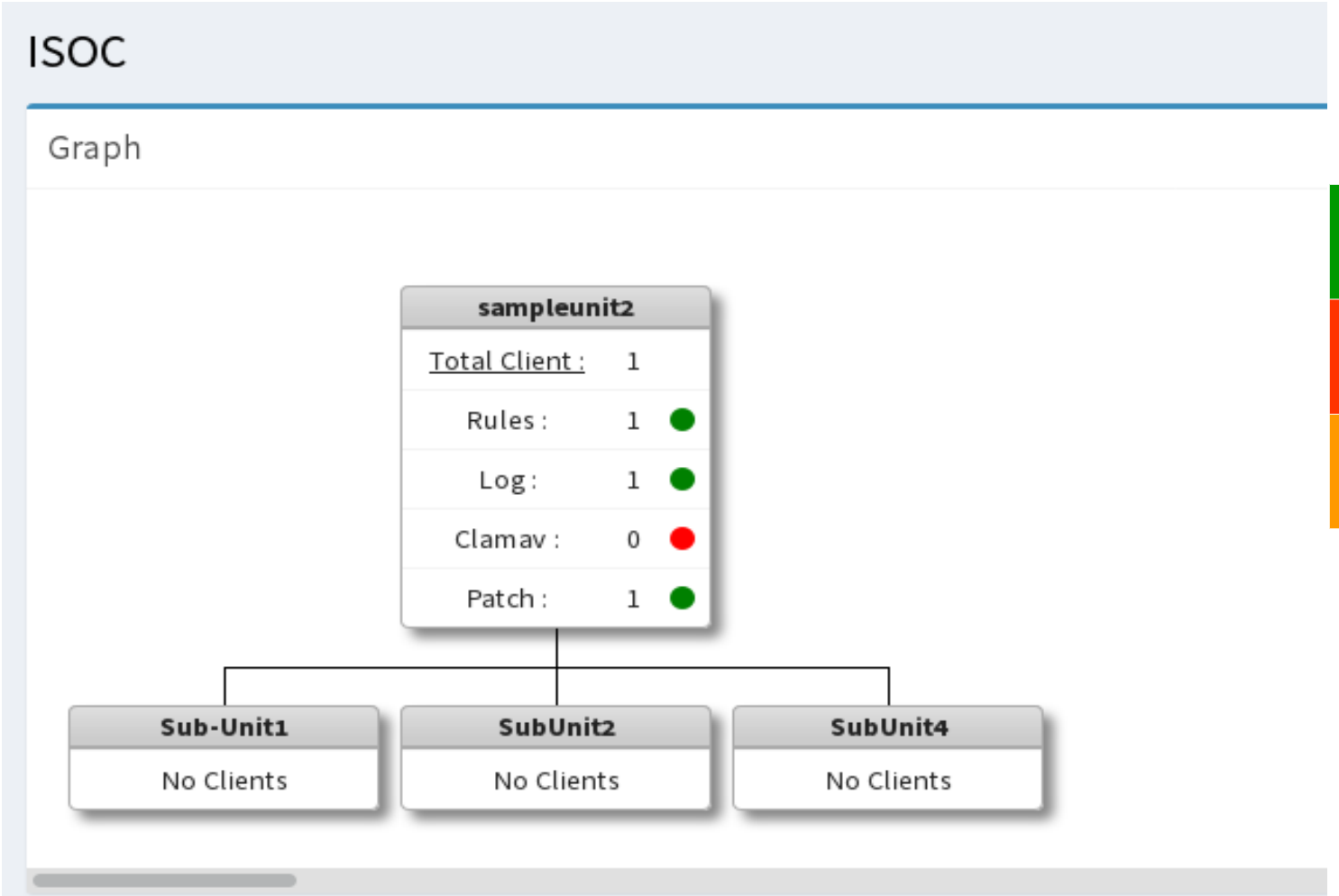
Hierarchy

- To monitor client update status for sub-units
- To get statistics about how many clients updated with Anti-virus,Policies ,Patch updates and sending logs
- Unit Admin can view status only their sub-units only
- AHCC Super Admin only can view statics for All Units as graph

Hierarchy Graph for Unit Admin / Sub-Units

- Login as admin user then click “Hierarchy” menu option in side bar



% of updated Client is equal to 100%

% of updated client is < 50 %

% of updated client is > 50 < 100 %

Alerts on Violations

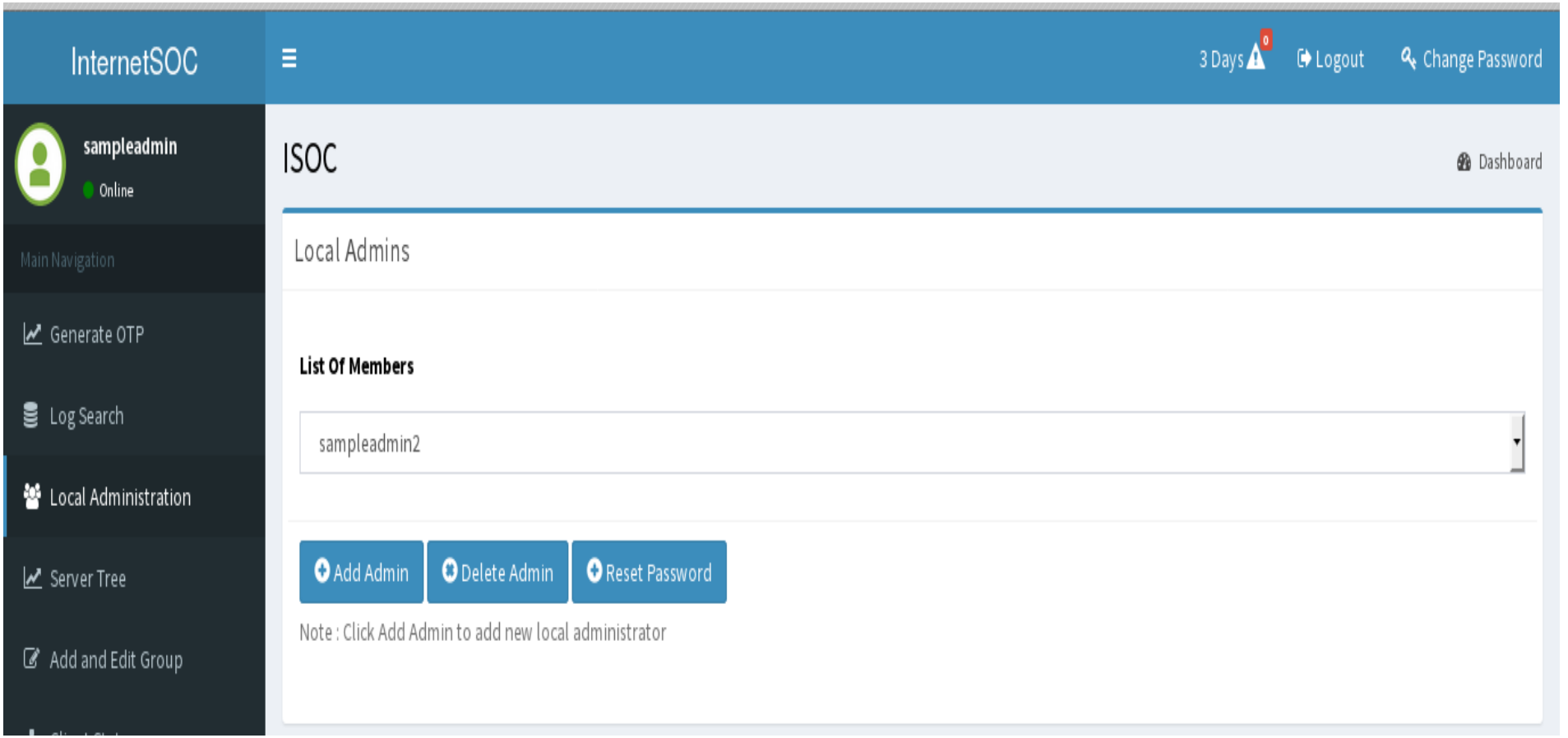
- System in on state after Office hours
- USB Mass storage device usage
- Accessing blocked websites / URL
- Accessing non-privileged application files / unauthorized file system access
- Violation alerts notified if only log is registered in client and received by server
- Alerts are notified from last 3 days processed log entries

Local Administration Management

- To Create new sub-unit / hierarchy based unit administrator user creation
- Unit admin can delete existing local administrators
- Unit Administrator can also reset / change password for sub-unit admin / Local Administrators
- AHCC Super Admin only can delete Units / Sub-Units / Client if not required

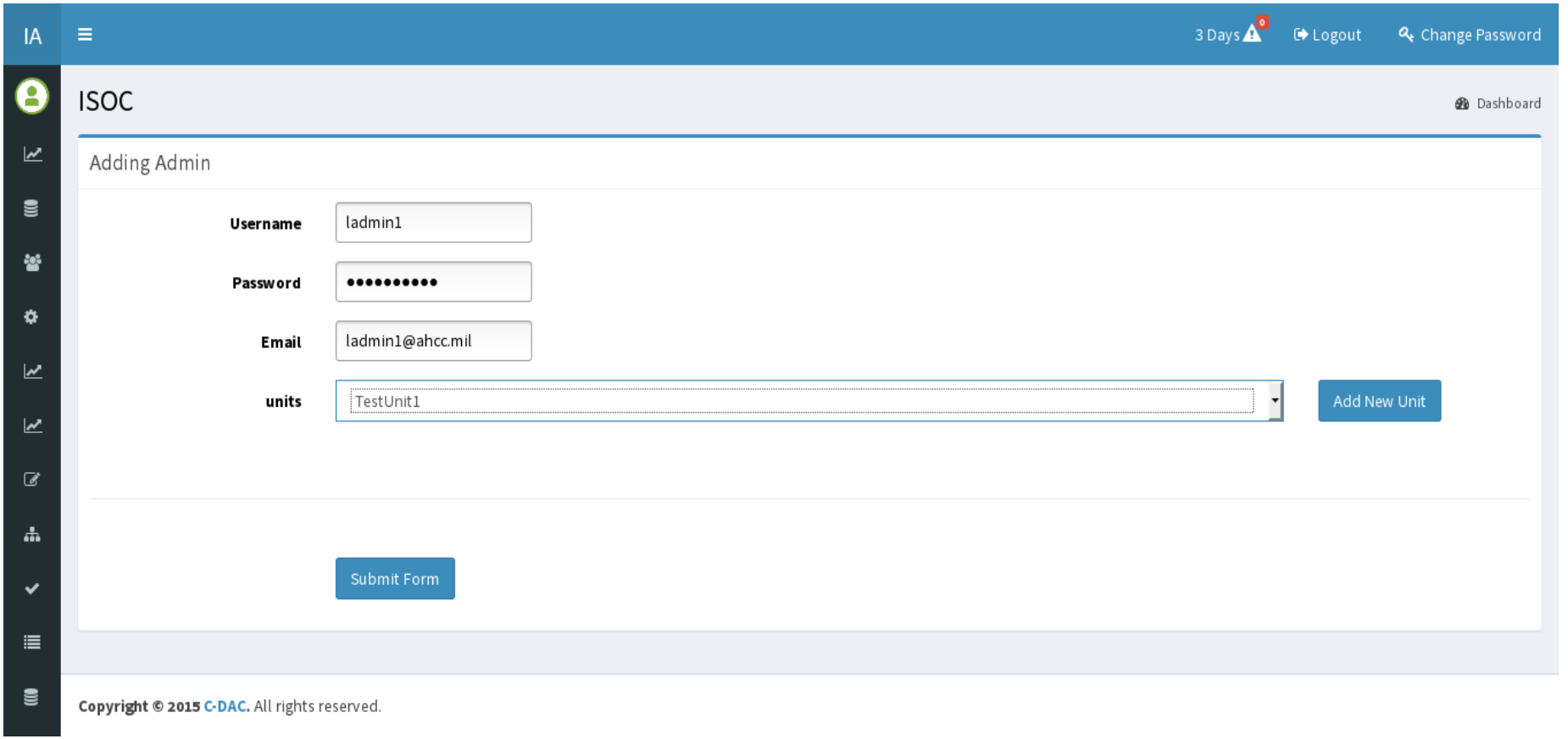
Creating Local / New Sub-Unit Administrator

- Click Local Administration Menu



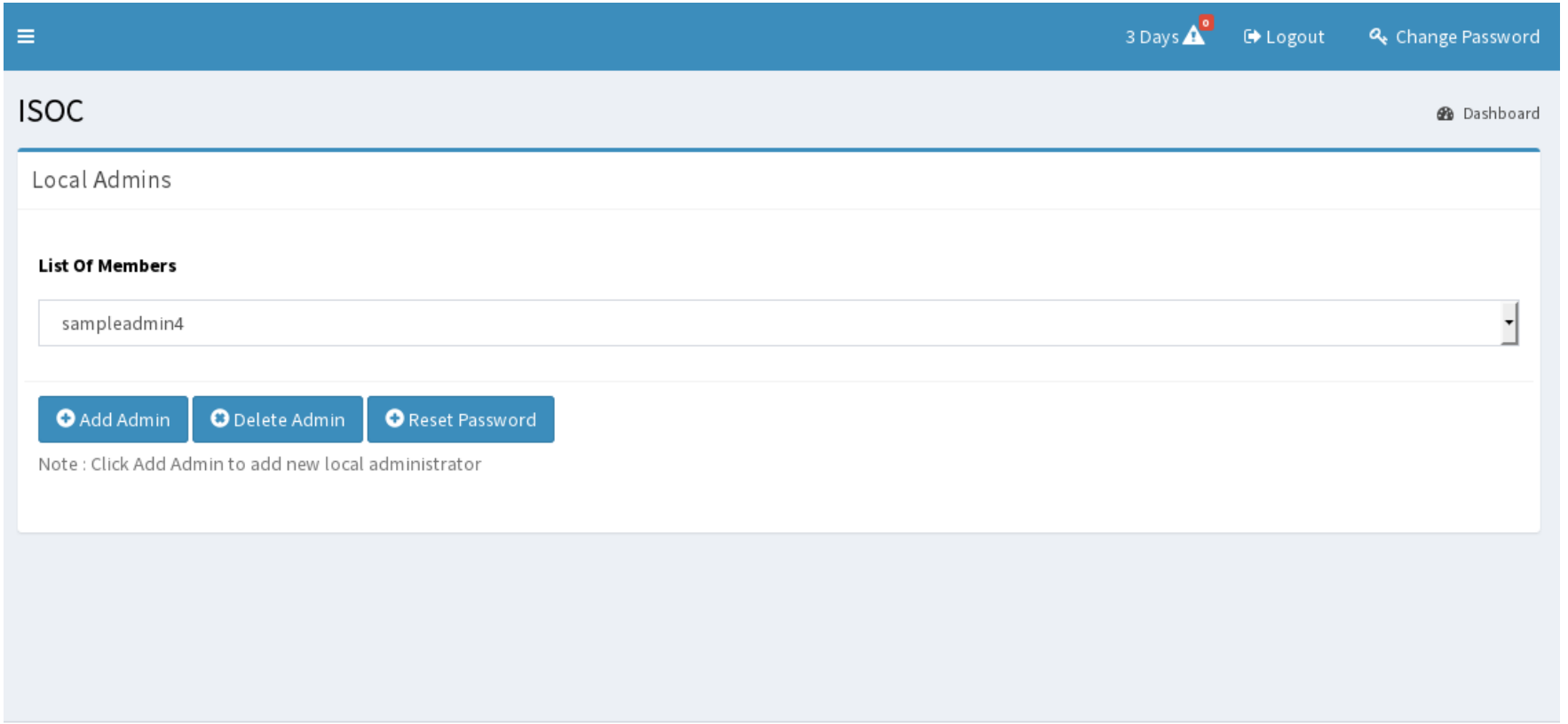
Adding New Local Administrator

- Click on Add Admin button
- Enter value for User name,Password,email,choose unit name
- Add new unit to create new unit,otherwise choose existing unit



Removing Local Administrator

- Select local administrator name
- Click on Remove Admin



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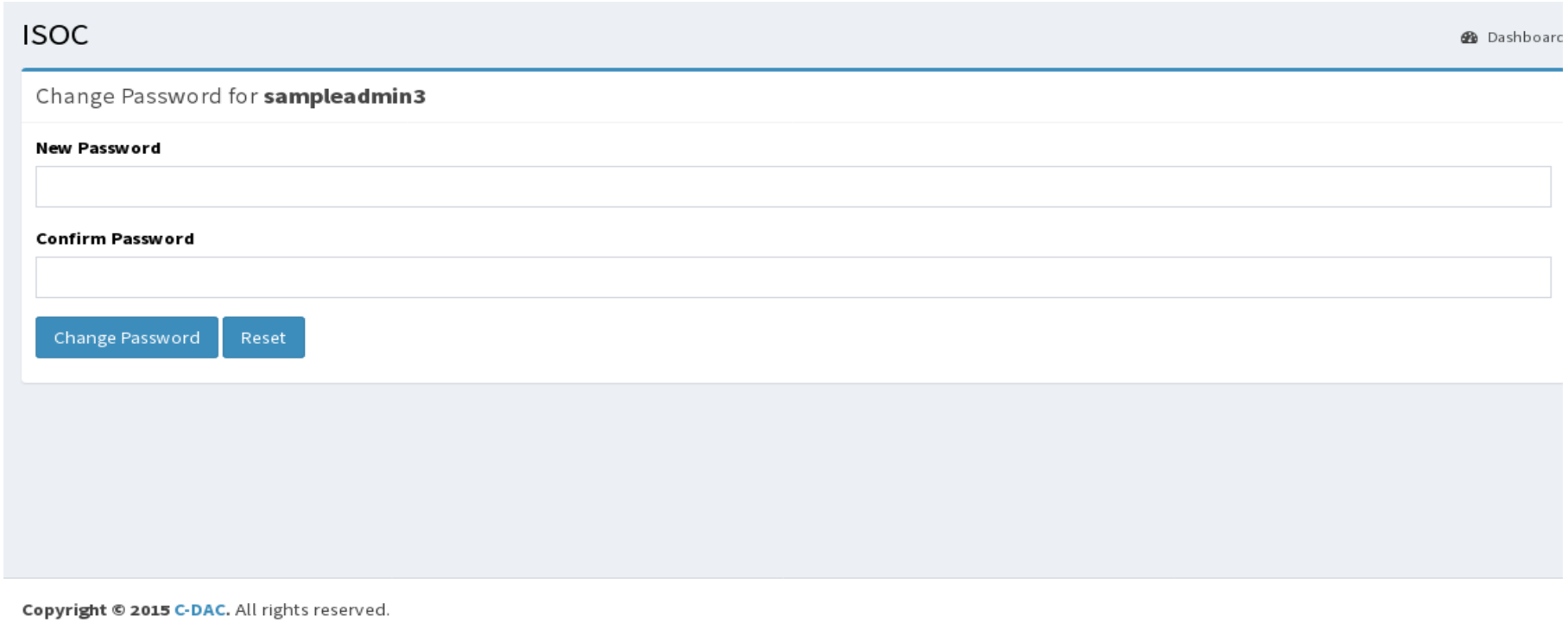
Change password for local Administrator

- Select Local Administrator name from list of members then click Reset Password button
- Enter new password then click Change Password button



Package Management

www.bosslinux.in

What is package management system?

- A package management system (or PMS) is a collection of tools to automate the process of installing, upgrading, configuring, and removing software packages from a computer.
- Distributions of Linux typically consist of hundreds or even thousands of distinct software packages therefore managing the packages is very much essential.

www.bosslinux.in

Package management tools

- dpkg
- apt-get
- gdebi
- Synaptic manager

www.bosslinux.in

dpkg

- dpkg is Debian Package Manager
- The most common use of dpkg is to install a local .deb file.
- To install a .deb file, become root and use the command:

  dpkg -i <filename.deb >
- Dpkg can also be used to:
- dpkg -l : lists the installed packages
- dpkg -S : Search which package owns a file
- dpkg --configure : presents whatever configuration options are available for the package
- dpkg --remove : removes a package

www.bosslinux.in

Usage of apt-get

- Ways to use aptget
- To update the packages list,
  - Apt-get update
- To install a package (ex: gdm) ,
  - Apt-get install gdm
- To remove a package (ex: gdm) from your system
  - Apt-get remove gdm
- To remove the package and also its configuration files from your system
  - Apt-get - -purge remove gdm

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Usage of apt-get contd...

- To upgrade all the packages which is installed in your system.
  - Apt-get upgrade
- To upgrade all the packages on your system, and, if needed for a package upgrade, installing extra packages or removing packages
  - Apt-get dist-upgrade

www.bosslinux.in

How to work with apt-get?

- Open vi /etc/apt/sources.list and add the following repositories in it
  - deb http://packages.bosslinux.in/boss anoop main contrib non free
  - Deb-src http://packages.bosslinux.in/boss anoop main contib nonfree
- Run aptget update command from the prompt
- This command looks for the packages list available in the archives and saves it in /var/lib/apt/lists.
- When we install a package, apt will search for status and path of the package in package lists file

www.bosslinux.in

Usage apt-cache

- To find packages whose description contain word
  - apt-cache search word
- To view the detailed information of a package
  - apt-cache show <packagename>
- **apt-cache commands:**
  - apt-cache show
  - apt-cache depends
  - apt-cache search

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gdebi

- Simple tool to install deb files - GNOME GUI
- gdebi lets you install local deb packages resolving and installing its dependencies, only if the system is connected to the Internet.
- apt does the same, but only for remote (http, ftp) located packages.

www.bosslinux.in

gdebi

- Simple tool to install deb files - GNOME GUI
- gdebi lets you install local deb packages resolving and installing its dependencies, only if the system is connected to the Internet.
- apt does the same, but only for remote (http, ftp) located packages.

www.bosslinux.in

Installation of rpm and exe

- Installing rpm packages
- Rpm packages can be installed using a tool called alien.
  - Alien -i <rpm package name>
  - Alien -d <rpm package name>
- Installing exe files
- Exe packages can be installed using a tool called wine.
  - Wine <name of the exe file>

www.bosslinux.in

Installation from compressed files

Tar.gz or zip files installation

- Right click on the corresponding file and choose “extract here ” option
- Follow the instructions in README file or install file
- Mostly the steps will be
  - ./configure
  - make
  - make install

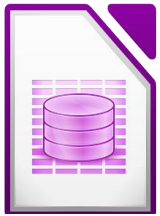
www.bosslinux.in

LIBREOFFICE

WRITER

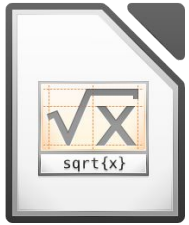
CALC

IMPRESS



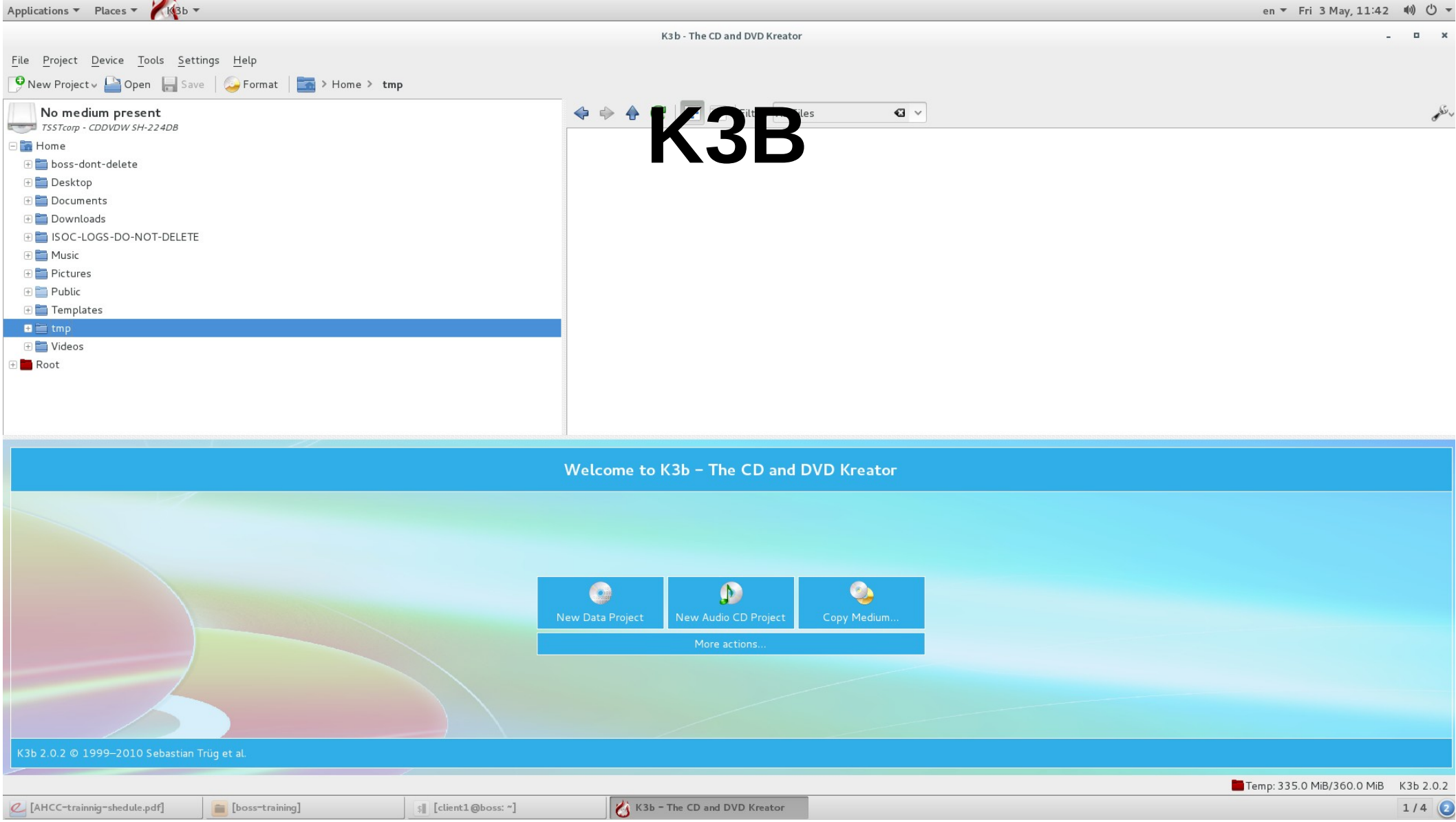
BASE

DRAW



FORMULA

	Writer	A word processor with similar functionality and file support to Microsoft Word or WordPerfect. It has extensive WYSIWYG word processing capabilities, but can also be used as a basic text editor.
	Calc	A spreadsheet program, similar to Microsoft Excel or Lotus 1-2-3. It has a number of unique features, including a system which automatically defines series of graphs, based on information available to the user.
	Impress	A presentation program resembling Microsoft PowerPoint. Presentations can be exported as SWF files, allowing them to be viewed on any computer with Adobe Flash Player installed.
	Draw	A vector graphics editor and diagramming tool similar to Microsoft Visio and comparable in features to early versions of CorelDRAW.
	Math	An application designed for creating and editing mathematical formulae. The application uses a variant of XML for creating formulas, as defined in the OpenDocument specification.
	Base	A database management program, similar to Microsoft Access. LibreOffice Base allows for the creation and management of databases as well as the preparation of forms and reports that provide end users easy access to data.



K3b is a full-featured, easy to use CD and DVD burner, copier, ripper and more.

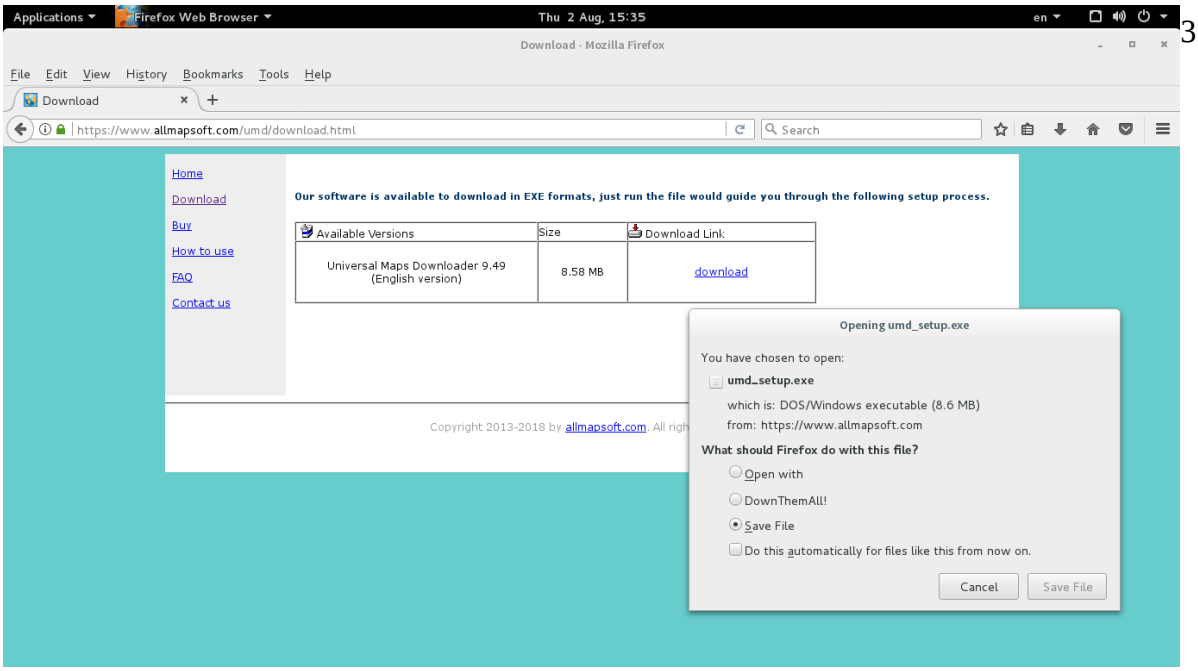
Features

- Burn and Copy CDs and DVDs
- Rip and Create audio CDs
- Rip DVDs
- Create mixed CDs (audio + data)
- Create video CDs

UMD INSTALL GUIDE for BOSS

1. Open your **ADMIN account.**

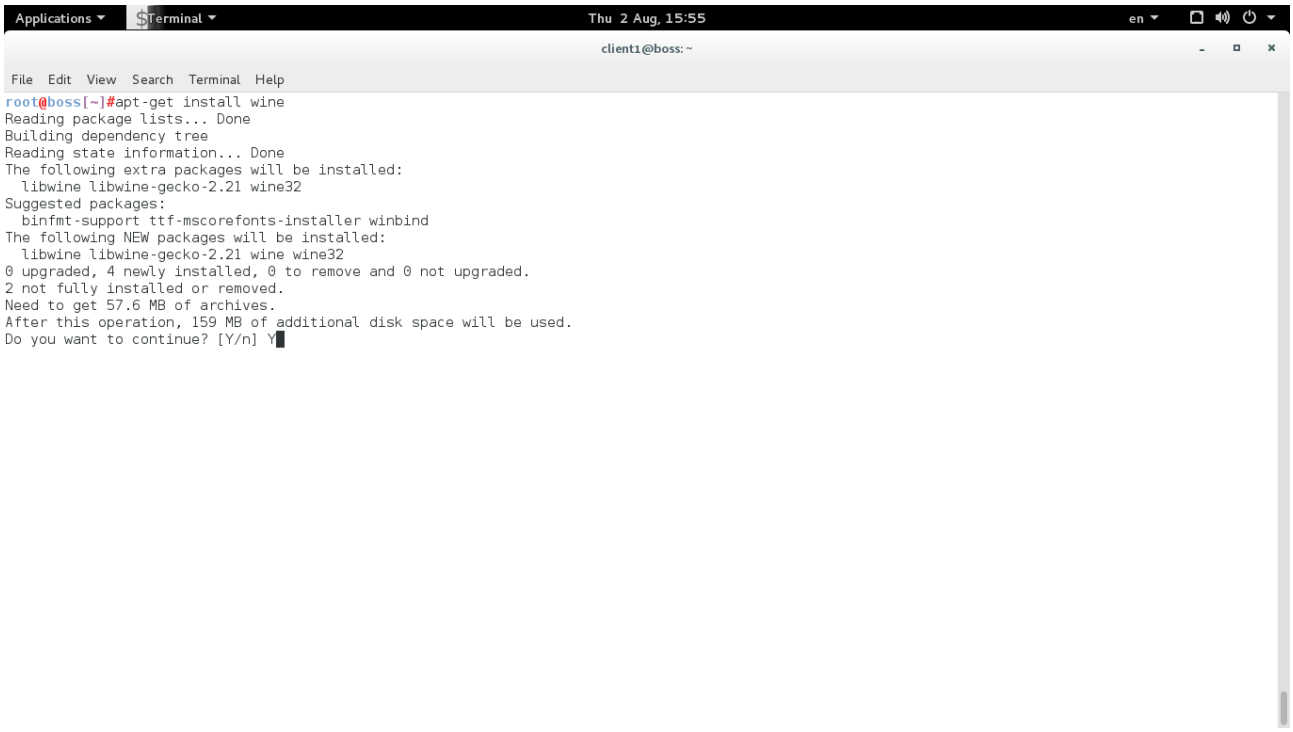
2. Go to web address : https://www.allmapsoft.com/umd/download.html



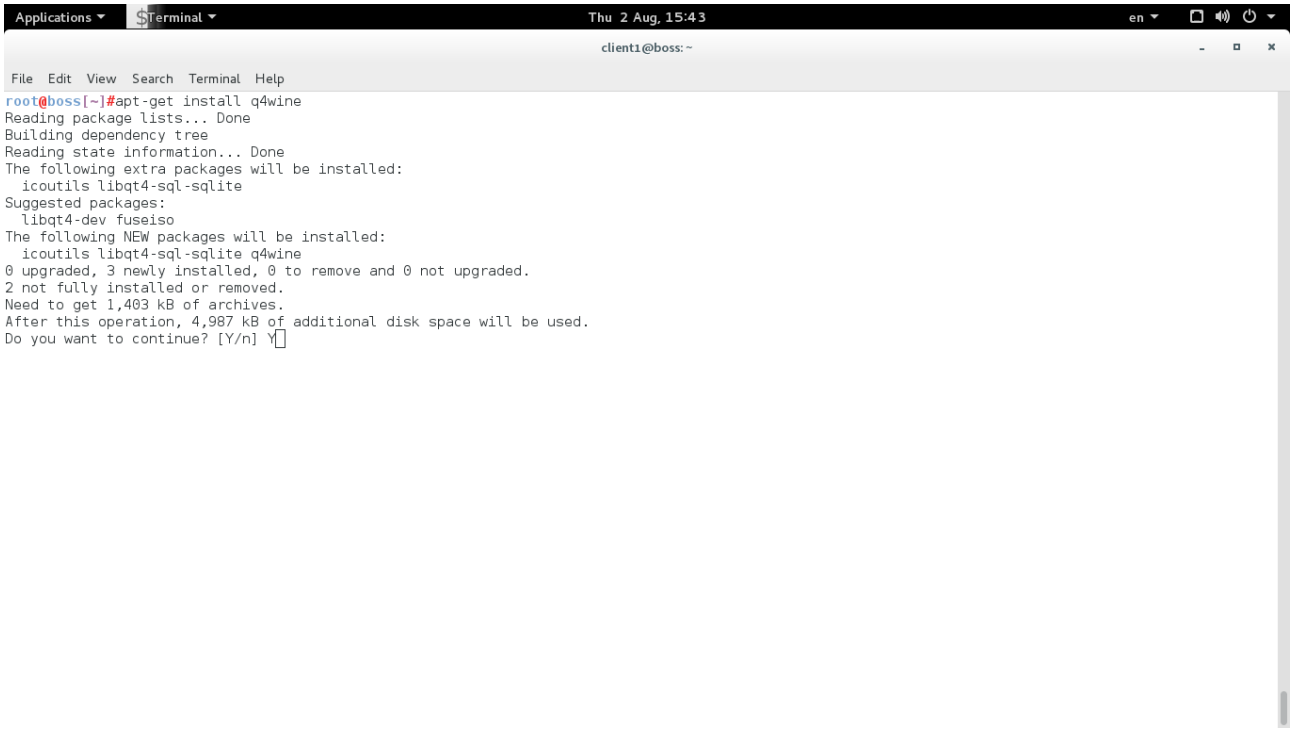
3.

3.Open terminal to install wine:

 # sudo apt-get install wine



4. Install GUI for Wine:
#sudo apt-get install q4wine



5. go to Applications –------ > System Tools –--- > **q4wine** , a First time Setup wizard appear, click **“NEXT”** to proceed as shown

NOTE : **if error dialog comes like this , click “OK”:**

Applications
Thu 2 Aug, 16:05
en
CIVIL INTERNET
home
Untitled New Document...
Application Status.html
ANURAG
desktop22may18
Trash
Untitled Folder 3
Hemant
quotation
G P SINGH
install_2.png
LTSP_THIN_CLIENT.zip
1111111.pdf
dply boss.odp
LTSP_THIN_CLIENT
Presentation.pptx
google-earth-pro-stable_7.1....
quotqtion sso and patch mgt ...
install_umd1.png
Mohammad.pdf
First startup wizard
First startup wizrad
Step 3 of 8
Default Wine paths:
wine bin: /usr/bin/wine
wine server: /usr/lib/i386-linux-gnu/wine/bin/wineserver
wine loader: /usr/bin/wine
wine libs (32bit): /usr/lib/i386-linux-gnu
wine libs (64bit):
Help
< Back
Next >
Cancel
Army Operating System
BOSS
Bharat Operating System Solutions
[client1@boss: ~]
[LTSP Howto in BOSS.pdf]
[umd_install_guide.docx ...
[Q4Wine on 64bit machi...
[files_for_map_download...
First startup wizard
1 / 2

Applications
Q4Wine
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Application Status.html
ANURAG
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Trash
Untitled Folder 3
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dply boss.odp
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quotqtion sso and patch mgt ...
install_umd1.png
Mohammad.pdf
First startup wizard
First startup wizrad
Step 4 of 8
System utils paths:
tar: /bin/tar
mount: /bin/mount
umount: /bin/umount
sudo: /usr/bin/sudo
gui sudo: /usr/bin/gksudo
nice: /usr/bin/nice
renice: /usr/bin/renice
sh: /bin/sh
Help
< Back
Next >
Cancel
Army Operating System
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[client1@boss: ~]
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First startup wizard
1 / 2

Applications
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Trash
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G P SINGH
install_2.png
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1111111.pdf
dply boss.odp
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Presentation.pptx
google-earth-pro-stable_7.1....
install_umd1.png
Mohammad.pdf
First startup wizard
First startup wizrad
Step 5 of 8
Console application settings:
Binary:
/usr/bin/xterm
Arguments:
-e
media-gfx/icoutils settings:
wrestool:
/usr/bin/wrestool
icotool:
/usr/bin/icotool
Help
< Back
Next >
Cancel
Army Operating System
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[umd_install_guide.docx ...
[Q4Wine on 64bit machi...
[files_for_map_download...
First startup wizard
1 / 2

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ANURAG
desktop22may18
Trash
Untitled Folder 3
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G P SINGH
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Presentation.pptx
google-earth-pro-stable_7.1....
install_umd1.png
Mohammad.pdf
First startup wizard
First startup wizrad
Step 6 of 8
Network settings
Proxy type:
No Proxy
Host:
Port:
Username:
Password:
Help
< Back
Next >
Cancel
Army Operating System
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Bharat Operating System Solutions
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[LTSP Howto in BOSS.pdf]
[umd_install_guide.docx ...
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First startup wizard
1 / 2

Applications
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Trash
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Hemant
quotation
G P SINGH
install_2.png
LTSP_THIN_CLIENT.zip
1111111.pdf
dply boss.odp
LTSP_THIN_CLIENT
quotqtion sso and patch mgt ...
Presentation.pptx
google-earth-pro-stable_7.1....
install_umd1.png
Mohammad.pdf
First startup wizard
First startup wizrad
Step 7 of 8
Select Quick Mount Profile
The quick mount features allows you to mount umount CD images and drivers with a context menu entry.
Profiles:
sudo
Profile Strings:
Mount:
Mount image:
Umount:
Help
< Back
Next >
Cancel
Army Operating System
BOSS
Bharat Operating System Solutions
[client1@boss: ~]
[LTSP Howto in BOSS.pdf]
[umd_install_guide.docx ...
[Q4Wine on 64bit machi...
[files_for_map_download...
First startup wizard
1 / 2

Applications
Q4Wine
Thu 2 Aug, 16:06
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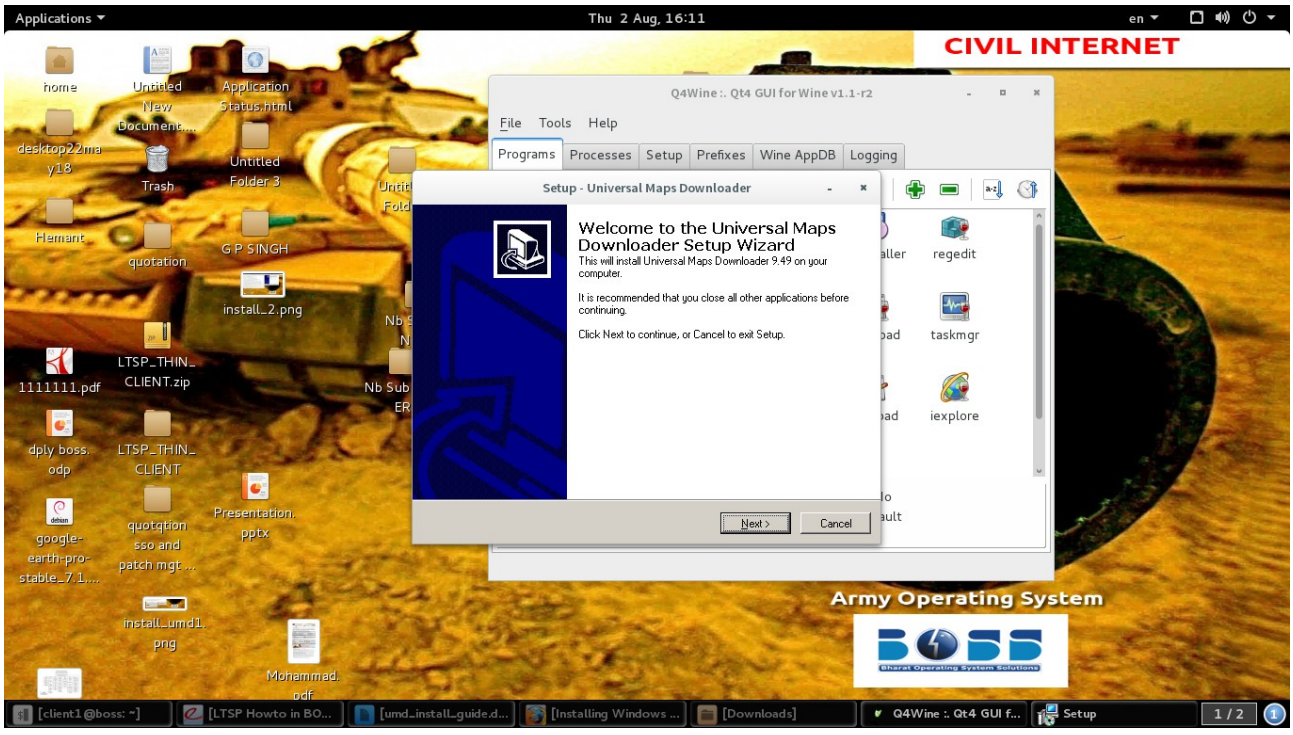
desktop22may18
Trash
Untitled Folder 3
Hemant
quotation
G P SINGH
install_2.png
LTSP_THIN_CLIENT.zip
1111111.pdf
dply boss.odp
LTSP_THIN_CLIENT
quotqtion sso and patch mgt ...
Presentation.pptx
google-earth-pro-stable_7.1....
install_umd1.png
Mohammad.pdf
First startup wizard
First startup wizrad
Step 8 of 8
All ready for finishing Q4Wine setup.
Please, press the Finish button to create finish setup process. Or press Back button for return.
Help
< Back
Finish
Cancel
Army Operating System
BOSS
Bharat Operating System Solutions
[client1@boss: ~]
[LTSP Howto in BOSS.pdf]
[umd_install_guide.docx ...
[Q4Wine on 64bit machi...
[files_for_map_download...
First startup wizard
1 / 2

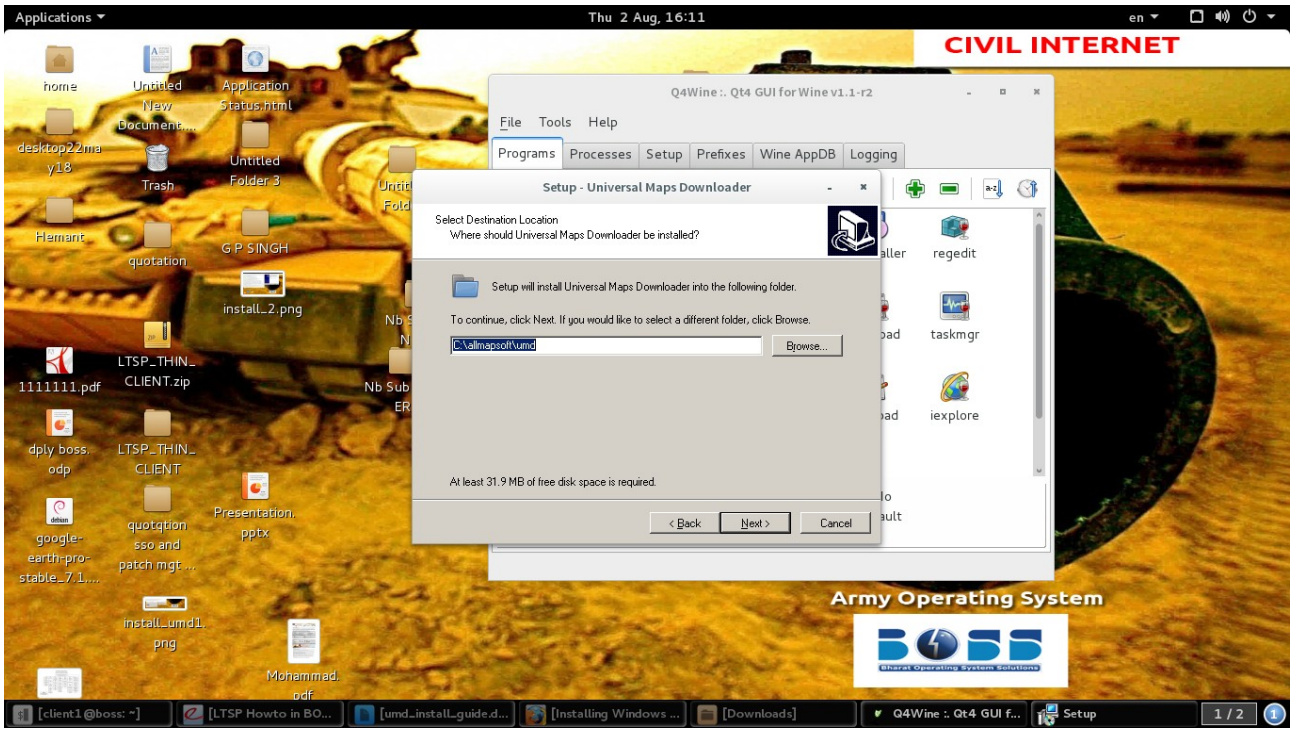
5. select exe downloaded for setup, and Right click to choose “Open with” q4wine

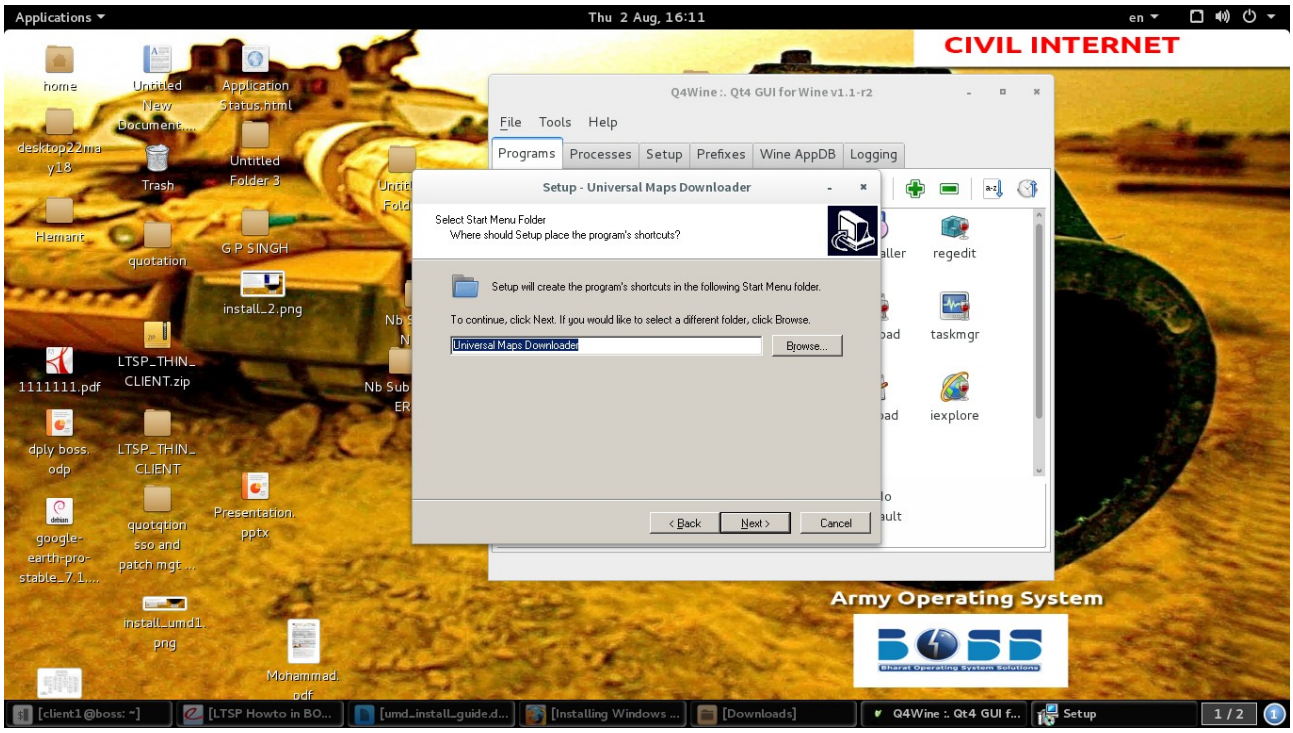
if error dialog comes like this , click “OK”:

6. This windows comes after clicking OK , **proceed by clicking OK.**

7. Setup wizard appears now , proceed as shown :




Applications
Thu 2 Aug, 16:11
en
CIVIL INTERNET
Q4Wine :. Qt4 GUI for Wine v1.1-r2
File Tools Help
Programs Processes Setup Prefixes Wine AppDB Logging
Setup - Universal Maps Downloader
Select Destination Location
Where should Universal Maps Downloader be installed?
Setup will install Universal Maps Downloader into the following folder.
To continue, click Next. If you would like to select a different folder, click Browse.
C:\allmapsoft\umd
Browse...
At least 31.9 MB of free disk space is required.
< Back
Next >
Cancel
Army Operating System
[client1@boss: ~]
[LTSP Howto in BO...
[umd_install_guide.d...
[Installing Windows ...
[Downloads]
Q4Wine :. Qt4 GUI f...
Setup
1 / 2


Applications
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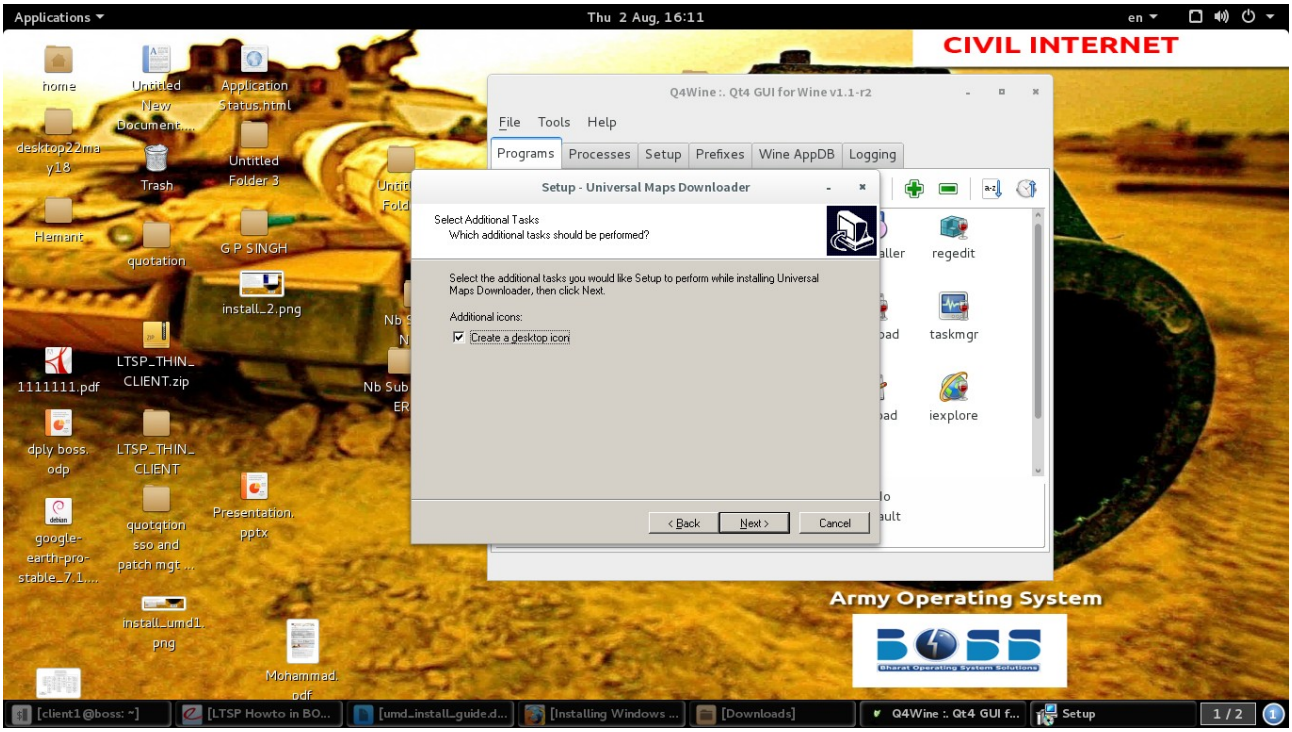
CIVIL INTERNET
Q4Wine :. Qt4 GUI for Wine v1.1-r2
File Tools Help
Programs Processes Setup Prefixes Wine AppDB Logging
Setup - Universal Maps Downloader
Select Start Menu Folder
Where should Setup place the program's shortcuts?
Setup will create the program's shortcuts in the following Start Menu folder.
To continue, click Next. If you would like to select a different folder, click Browse.
Universal Maps Downloader
Browse...
< Back
Next >
Cancel
Army Operating System
[client1@boss: ~]
[LTSP Howto in BO...
[umd_install_guide.d...
[Installing Windows ...
[Downloads]
Q4Wine :. Qt4 GUI f...
Setup
1 / 2


Applications
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en
CIVIL INTERNET
Q4Wine :. Qt4 GUI for Wine v1.1-r2
File Tools Help
Programs Processes Setup Prefixes Wine AppDB Logging
Setup - Universal Maps Downloader
Select Additional Tasks
Which additional tasks should be performed?
Select the additional tasks you would like Setup to perform while installing Universal Maps Downloader, then click Next.
Additional icons:
Create a desktop icon
< Back
Next >
Cancel
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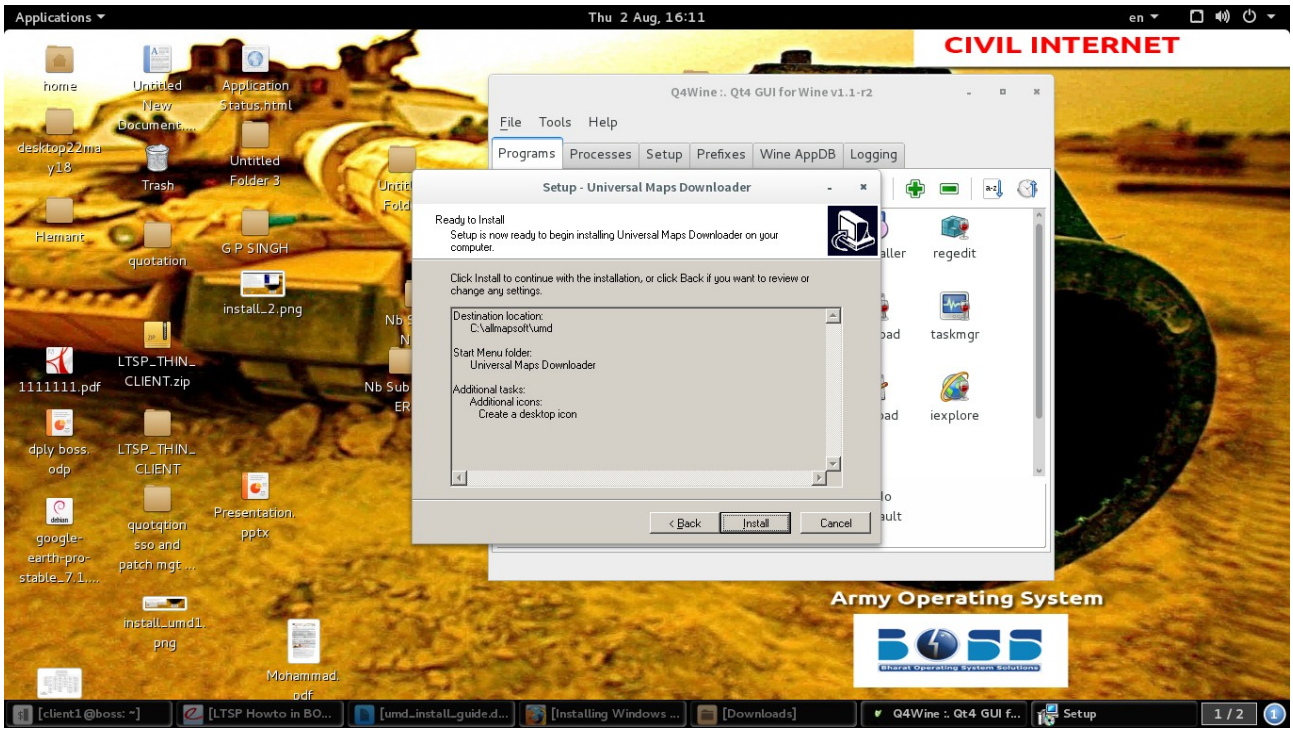
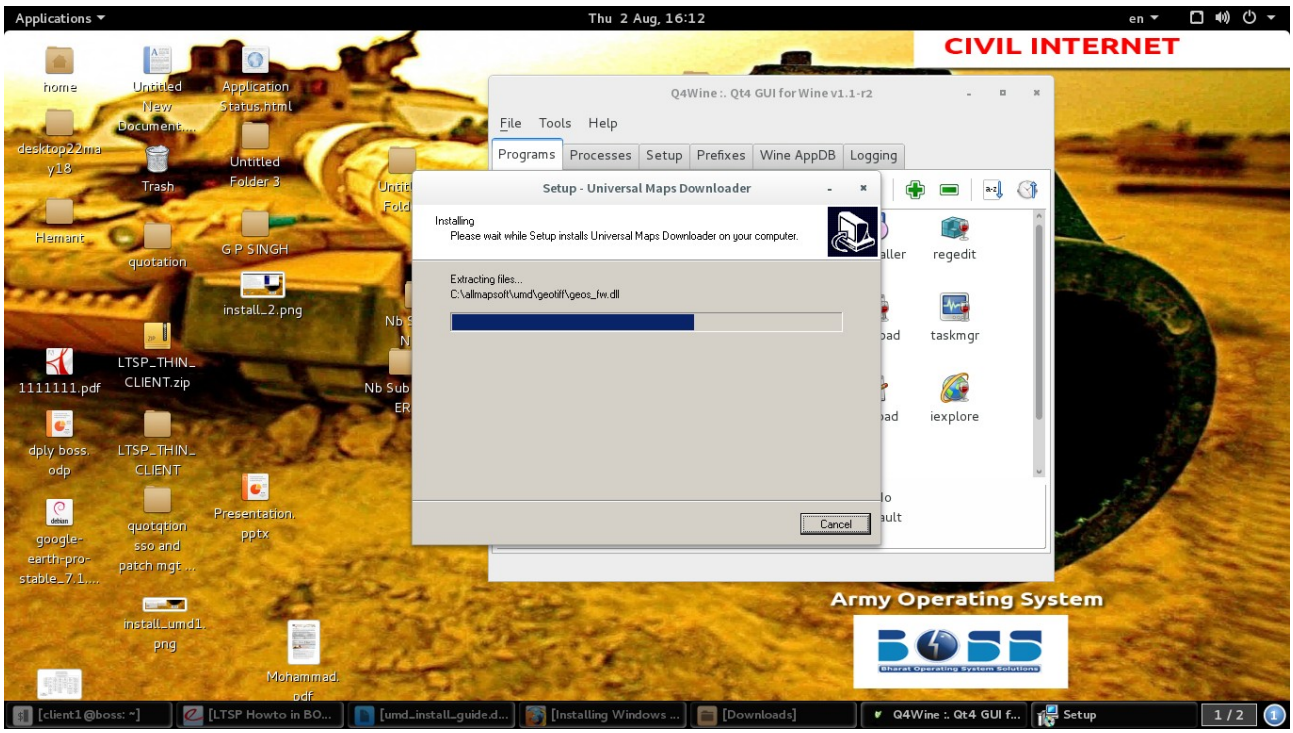
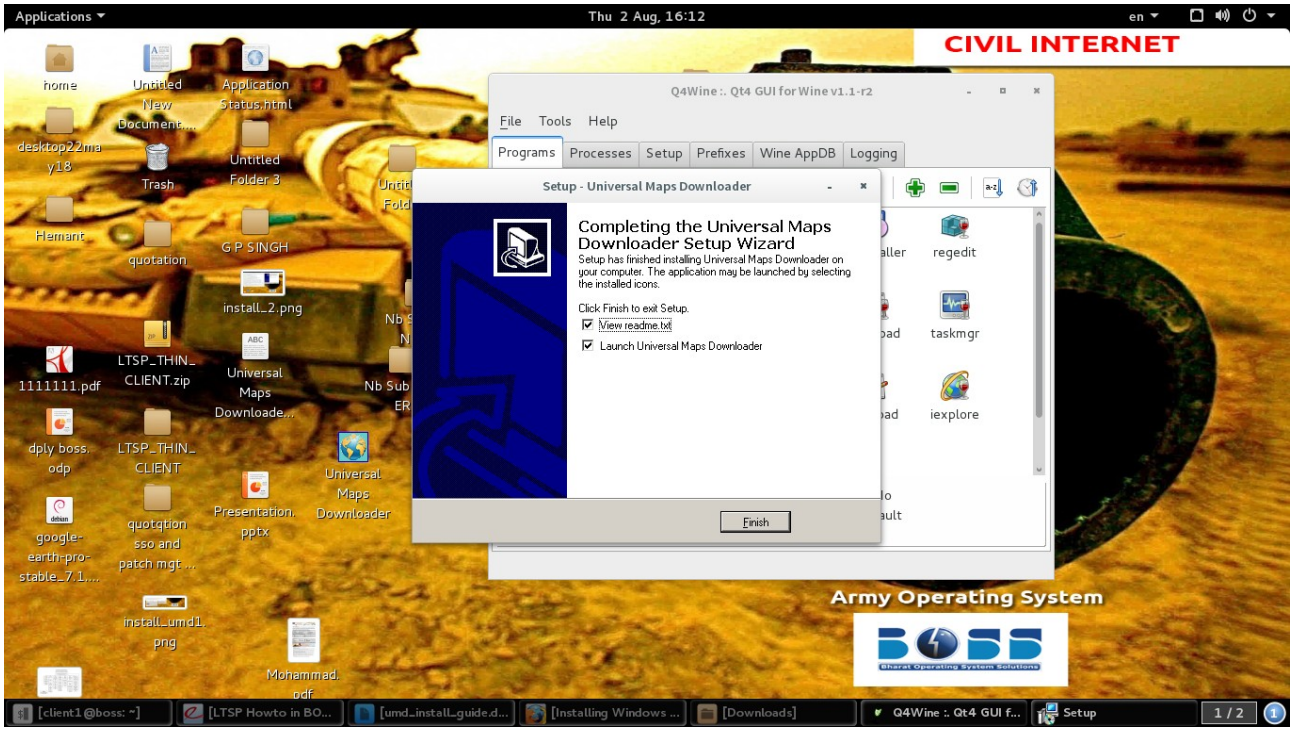

Applications
Thu 2 Aug, 16:11
en
CIVIL INTERNET
Q4Wine :. Qt4 GUI for Wine v1.1-r2
File Tools Help
Programs Processes Setup Prefixes Wine AppDB Logging
Setup - Universal Maps Downloader
Ready to Install
Setup is now ready to begin installing Universal Maps Downloader on your computer.
Click Install to continue with the installation, or click Back if you want to review or change any settings.
Destination location:
C:\allmapsoft\umd
Start Menu folder:
Universal Maps Downloader
Additional tasks:
Additional icons:
Create a desktop icon
< Back
Install
Cancel
Army Operating System
BOSS
Bharat Operating System Solutions


Applications
Thu 2 Aug, 16:12
en
CIVIL INTERNET
Q4Wine :. Qt4 GUI for Wine v1.1-r2
File Tools Help
Programs Processes Setup Prefixes Wine AppDB Logging
Setup - Universal Maps Downloader
Installing
Please wait while Setup installs Universal Maps Downloader on your computer.
Extracting files...
C:\allmapsoft\umd\geotiff\geos_fw.dll
Cancel
Army Operating System
BOSS
Bharat Operating System Solutions
[client1@boss: ~]
[LTSP Howto in BO...
[umd_install_guide.d...
[Installing Windows ...
[Downloads]
Q4Wine :. Qt4 GUI f...
Setup
1 / 2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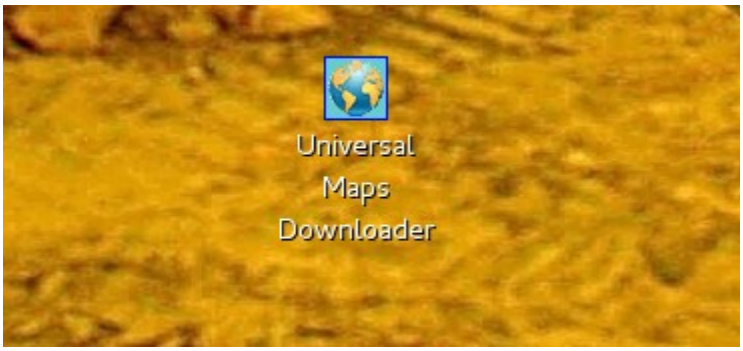
File Tools Help
Programs Processes Setup Prefixes Wine AppDB Logging
Setup - Universal Maps Downloader
Completing the Universal Maps Downloader Setup Wizard
Setup has finished installing Universal Maps Downloader on your computer. The application may be launched by selecting the installed icons.
Click Finish to exit Setup.
View readme.txt
Launch Universal Maps Downloader
Finish
Army Operating System
BOSS
Bharat Operating System Solutions
[client1@boss: ~]
[LTSP Howto in BO...
[umd_install_guide.d...
[Installing Windows ...
[Downloads]
Q4Wine :. Qt4 GUI f...
Setup
1 / 2

8. A Desktop icon will appear with UMD application. Double click to use.



Steps to allow particular URL which is other wise blocked by policy in ISOC (BOSS) PCs

NOTE : Only allow the websites you have permission to use as all the websites usage report will be available to ISOC portal, so if you are allowing any other blocked websites which you don't have permission to use then it will be treated as a violation.

All the below commands you have to run as a *admin* user

1. First open the file allowedurls.txt by double clicking it and then type the websites you wants to allow. Don't type http, www, or .com. For e.g if you want to allow https://www.facebook.com then just type facebook, don't type any thing else.
2. Now run command : *sudo apt-get update*
   sudo apt-get install incron inotify-tools
   Once installation is completed.
3. Run command : *sudo gedit /etc/incron.allow*
   and type
   root
   then save and close the file.
4. Now run command : *sudo incrontab -e*
   and type
   while [1]; do inotifywait -e modify /etc/hosts; sh /opt/manage-etc-hosts.sh; done
   in a single line. then save and exit the file by pressing "Cntl+x" and then "y".
5. Copy the file **manage-etc-hosts.sh** to /opt/ folder
   Run command : sudo cp <drag and drop **manage-etc-hosts.sh**> **/opt/**
6. Copy file **allowedurls.txt** to /opt/ folder
   Run Command: sudo cp <drag and drop **allowedurls.txt**> **/opt/**
7. Run command : sudo chmod +x **/opt/manage-etc-hosts.sh**
8. Run command: sudo **/opt/manage-etc-hosts.sh**
9. Run command : sudo init 6
   Your PC will restart after this and the blocked website which you have permission to use will start working.

E-token

1. List of currently supported devices:
    1. Aladdin
    2. Epass2003
    3. Gemalto
    4. Moserbaer
    5. Trustkey
2. Check etoken driver package → dpkg -l etoken-eprocure

    Package name: etoken-eprocure

    Version : 2.5

    Architecture : i386 (client machines)

E-token

- To check if the etoken is detected and necessary driver is loaded or not:

cat /etc/etoken.conf – lists the E-token device connected currently

/usr/lib/pkcs11/ - contains linux driver for all supported E-token devices

E-token

To check the working of etoken in BOSS OS

- Open Firefox Goto Preferences→Advanced→Certificates→Security Devices
- Click load to add module name and the location of the driver.
- Log in to the etoken by using the etoken password.

Troubleshooting BOSS

Hardware Issues

- Often involve improper hardware or software configuration
  - Obsolete hardware
  - Improper video card and monitor configuration
  - Corrupted harddisk
  - Less RAM / memory
  - Missing device drivers
- Quick fixes:
  - Check hardware cables , indicator lights and power
  - Replace devices

Software issues

- Often involve improper system / user settings
  - Missing program libraries/files
  - Process / permissions restrictions
  - conflicting applications
  - Missing dependencies , prerequisite shared libraries or packages required for program execution
  - Package files may be removed accidentally
- Quick fixes:
  - Locate and identify missing package / dependency
  - Do full system update with connected repo

Network Issues

- Often involve Network misconfiguration
  - Updates to network devices
  - Ip and dns misconfiguration
  - Missing ethernet driver
- Quick fixes
  - Check network cable and power
  - Check router and modem

Logs - /var/log

Most services logs their activities. Default log path: /var/log

- kern.log
  - all kernel / devices related logs
  - To check kernel related errors and warnings debugging hardware and connectivity issues
- syslog / messages
  - mainly used to store informational and non-critical system messages.
  - To track non-kernel boot errors, application related service errors and the messages that are logged during system startup.

Logs - /var/log

- auth.log
  - all login authentication logs including both local and remote logins
  - To investigate failed login attempts, brute-force attacks and other vulnerabilities related to user authorization mechanism.
- dmesg / daemon.log
  - Kernel ring buffer messages
  - To check a hardware is functioning improperly or not getting detected and all services running as daemons like cron

Logs - /var/log

- cups/*
  - all printer related logs
  - To check printer connectivity status , access and permissions errors
- clamav/*
  - all clamav antivirus related logs
  - To check antivirus database update errors
- apt/* and dpkg.log
  - Package updates and install logs
  - To check what are the packages installed and removed in the system

Logs

- Service logs - systemd and init services
  - /etc/init.d/gdm3 status
  - systemctl status gdm3
- To query journactl without opening raw log file
  - journalctl -b
    - To show data only from current boot
  - journalctl -a
    - To show all consolidated logs
  - journalctl -k
    - Show only kernel logs

Hardware info

- List all PCI devices
  - lspci and lspci -v
- List all usb devices connected currently
  - lsusb and lsusb -v
- List all hardware info and export to html file
  - lshw -html > /tmp/lshw.file
- Check RAM free space and swap space
  - free -m – to list as MB
- GUI interface for all above
  - hwinfo

Disk Info

- List all devices : sudo fdisk -l
- List all partitions blockid / uuid: sudo blkid
- List of mounted partitions: mount
- Used and available disk space: df -h
- Filesystem scanning for errors: sudo fsck
- GUI to perform disk checking:
  - gnome-disks (or) Applications → Utilities → Disks
- GUI to check filesystem usage
  - baobab (or) Applications → Utilities → Disk Usage Analyzer

Network Info

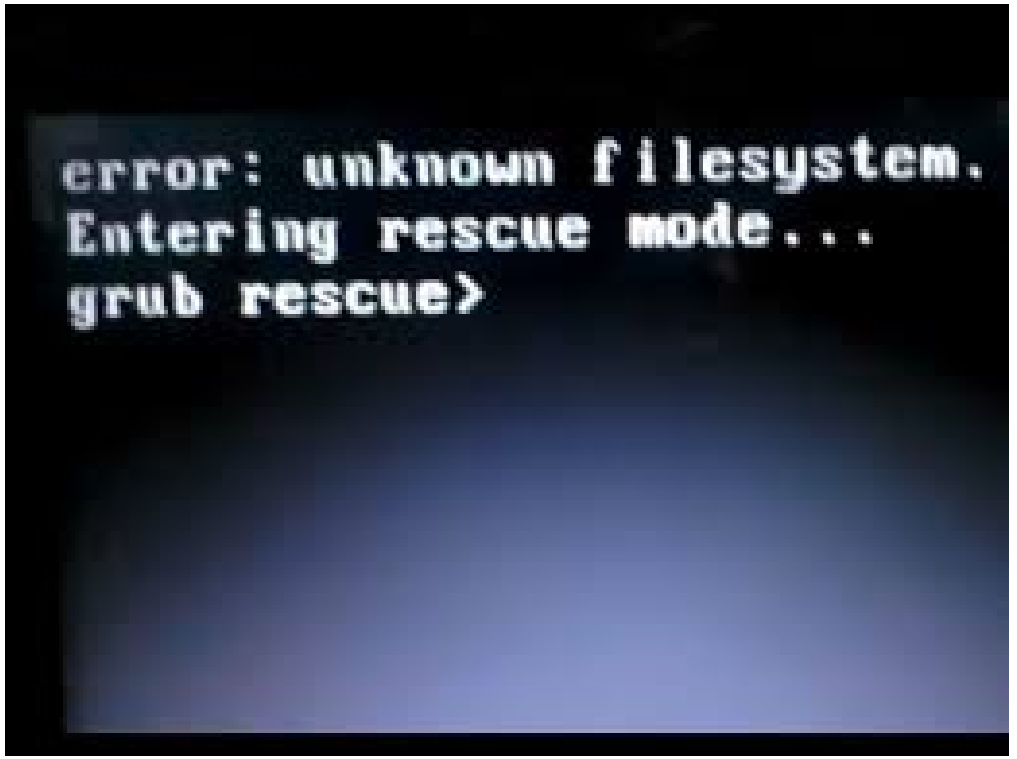
- Check IP and mac info : sudo ifconfig
- Check all ips of system: ip a
- To check network manual configuration
  - /etc/network/interfaces (or)
  - Network manager manual configuration
- To check dns info
  - /etc/resolv.conf
- To view IP routing table : route
- List all open connections: netstat

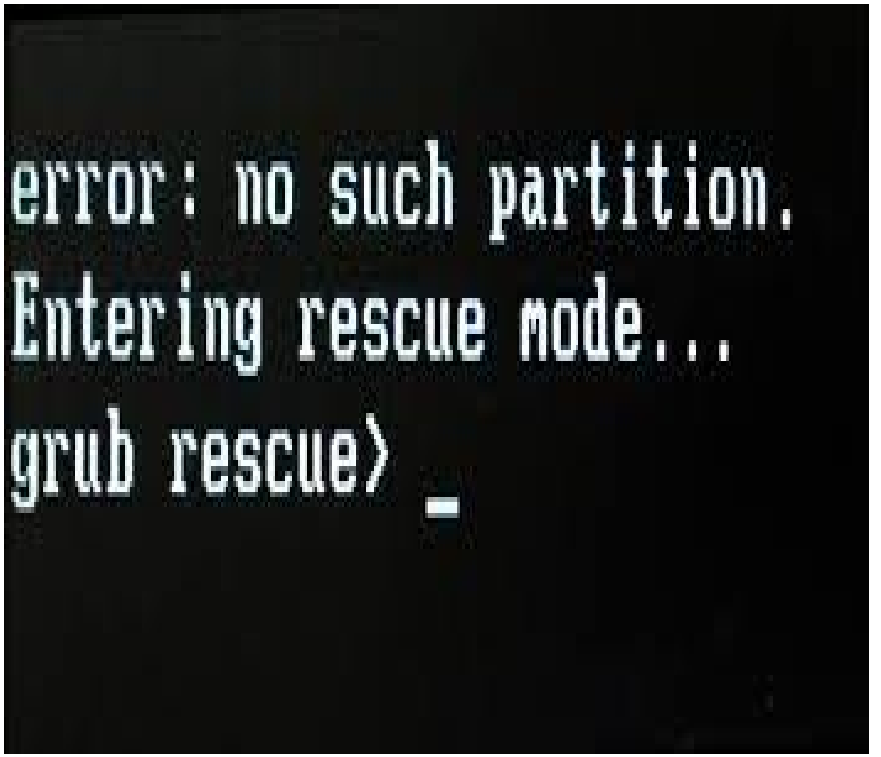
Process info

- List all process running by all users
  - ps aux
- Check specific process
  - ps -A | grep ProgramName
- List process along with CPU and memory consumption
  - top
- GUI to list and manage all process
  - gnome-system-monitor

Recovering Grub

Grub rescue mode





Grub rescue mode

grub rescue> ls

(hd0) (hd0,msdos1) (hd0,msdos2)

grub rescue> ls (hd0,1)/boot

./ ../ .config--3.16.0-4-686-pae initrd.img--3.16.0-4-686-pae vmlinuz-3.16.0-4-686-pae grub System.map--3.16.0-4-686-pae

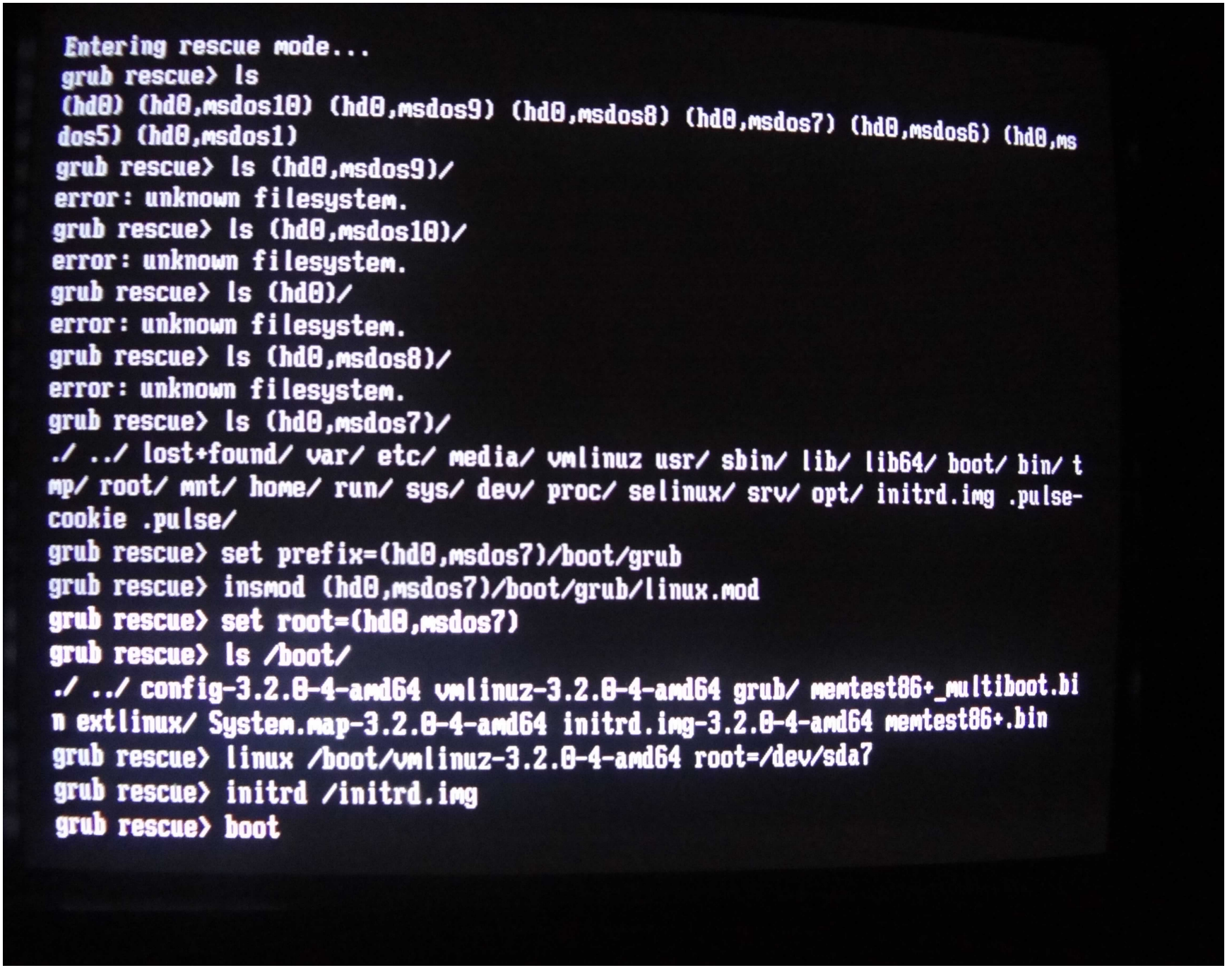
grub rescue>set prefix=(hd0,msdos1)/boot/grub

grub rescue>set root=(hd0,msdos1)

grub rescue>linux (hd0,1)/boot/vmlinuz--3.16.0-4-686-pae root=/dev/sda1

grub rescue> initrd (hd0,1)/boot/initrd.img--3.16.0-4-686-pae

grub rescue>boot


Entering rescue mode...
grub rescue> ls
(hd0) (hd0,msdos10) (hd0,msdos9) (hd0,msdos8) (hd0,msdos7) (hd0,msdos6) (hd0,ms
dos5) (hd0,msdos1)
grub rescue> ls (hd0,msdos9)/
error: unknown filesystem.
grub rescue> ls (hd0,msdos10)/
error: unknown filesystem.
grub rescue> ls (hd0)/
error: unknown filesystem.
grub rescue> ls (hd0,msdos8)/
error: unknown filesystem.
grub rescue> ls (hd0,msdos7)/
./ ../ lost+found/ var/ etc/ media/ vmlinuz usr/ sbin/ lib/ lib64/ boot/ bin/ t
mp/ root/ mnt/ home/ run/ sys/ dev/ proc/ selinux/ srv/ opt/ initrd.img .pulse-
cookie .pulse/
grub rescue> set prefix=(hd0,msdos7)/boot/grub
grub rescue> insmod (hd0,msdos7)/boot/grub/linux.mod
grub rescue> set root=(hd0,msdos7)
grub rescue> ls /boot/
./ ../ config-3.2.0-4-amd64 vmlinuz-3.2.0-4-amd64 grub/ memtest86+_multiboot.bi
n extlinux/ System.map-3.2.0-4-amd64 initrd.img-3.2.0-4-amd64 memtest86+.bin
grub rescue> linux /boot/vmlinuz-3.2.0-4-amd64 root=/dev/sda7
grub rescue> initrd /initrd.img
grub rescue> boot

Reinstalling grub

1. Once OS is booted from grub , reinstall grub to make it permanently fixed. Open terminal and run

    a) sudo os-prober

    b) sudo grub-install /dev/sda

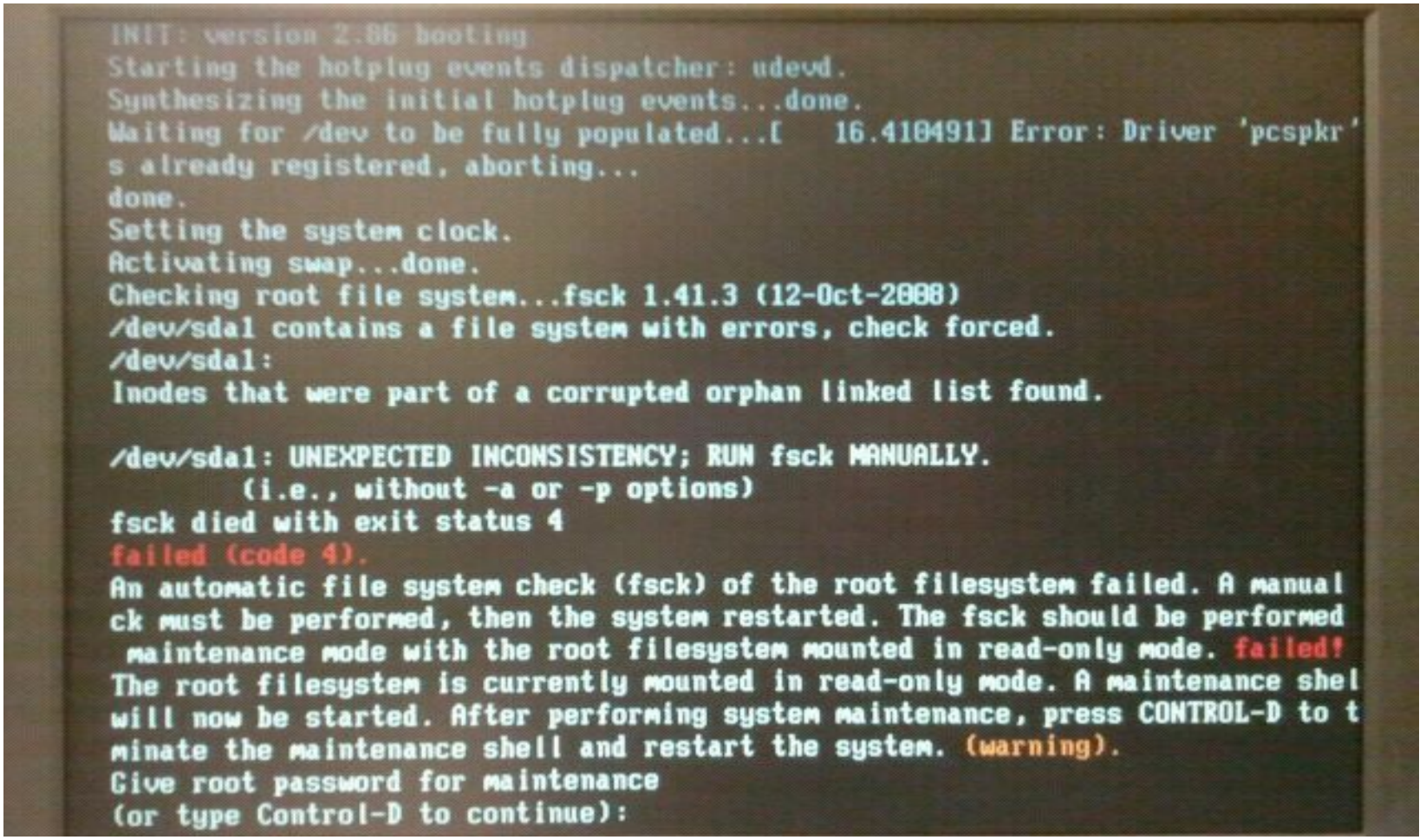
    c) sudo update-grub2

2. Replace /dev/sda with appropriate harddisk name. Donot proceed it with partition numbers.

    Eg: sda1 , sda5 – not allowed

Recovering Corrupted filesystem / files

Recovering Corrupted File system



Filesystem crash

1. Possible reasons
    1. Improper shutdown
    2. Improper time settings – resulting in system booted in future time
    3. Filesystem corruption due to improper unmount of encrypted partitions
    4. Not enough space in filesystem
2. Solutions
    1. Boot system in single user mode and do filesystem check
    2. Boot in troubleshooting mode and delete unwanted files

For Intranet systems

1. Boot the system and press “e” in the Grub entry.
2. Give grub username and password if prompted.
3. Remove “ro splash gfxpayload=1024x768x16 quiet …. “ entries from the line starting with “linux”
4. Append “rw init=/bin/bash” in the same line
5. Press “Ctrl+x” and boot the system
6. The system boots into recovery mode and login with root prompt
7. Run “fsck” in the prompt
    a) Give “y” for all the questions
    b) Run “reboot” on successful finishing of the command.

For Civilnet – with encrypted FS

1. Follow steps 1 to 5 as in previous method. Provide encryption passphrase when prompted

2. To scan and detect all LVM partitions , run

vgscan

Reading all physical volumes. This may take a while...

Found volume group "boss" using metadata type lvm2

#vgchange -ay

6 logical volume(s) in volume group "boss" now active

1. Volumes detect as */dev/<hostname>/vg-usr*

2. Run “fsck” in the prompt for all detected partitions

fsck */dev/<hostname>/vg-usr*

fsck /dev/<hostname>/vg-var

Using live cd

1. Boot a BOSS live cd
2. Mount the partition which is corrupted and check the mount path “ls /media”
3. Run “df -h” and find out the corresponding /dev/ device for the mounted partition. Eg:

   /dev/sda1 --- /media/87649eab-e1f2-4f09-8753-1b7ae0d26f35

4. Run “fsck /dev/sda1” as root user
5. Give “y” for all the questions
6. Run “reboot” on successful finishing of the command.

Recovering lost partition / files

1. To recover lost partitions / files , install “testdisk”
   - sudo apt-get install testdisk
2. Open root terminal and run “sudo testdisk”
3. Select appropriate harddisk and the partitions and select “Analyse” in the prompted window
4. Select “Deeper Search” and wait till the application analyses the entire hard disk and displays the files and folders
5. One can recover the entire partition by rewriting the partition table (sometimes make data loss) or recover files and folders by taking individual backup

Limitations: Files deleted via shift+del cannot be recovered

Filesystem full

1. /tmp is full – happens only in Civilnet when user is streaming heavy media in browser sometimes resulting in /tmp to be full. Will be cleared automatically within next 15 mins (or) delete *cap* files under /tmp

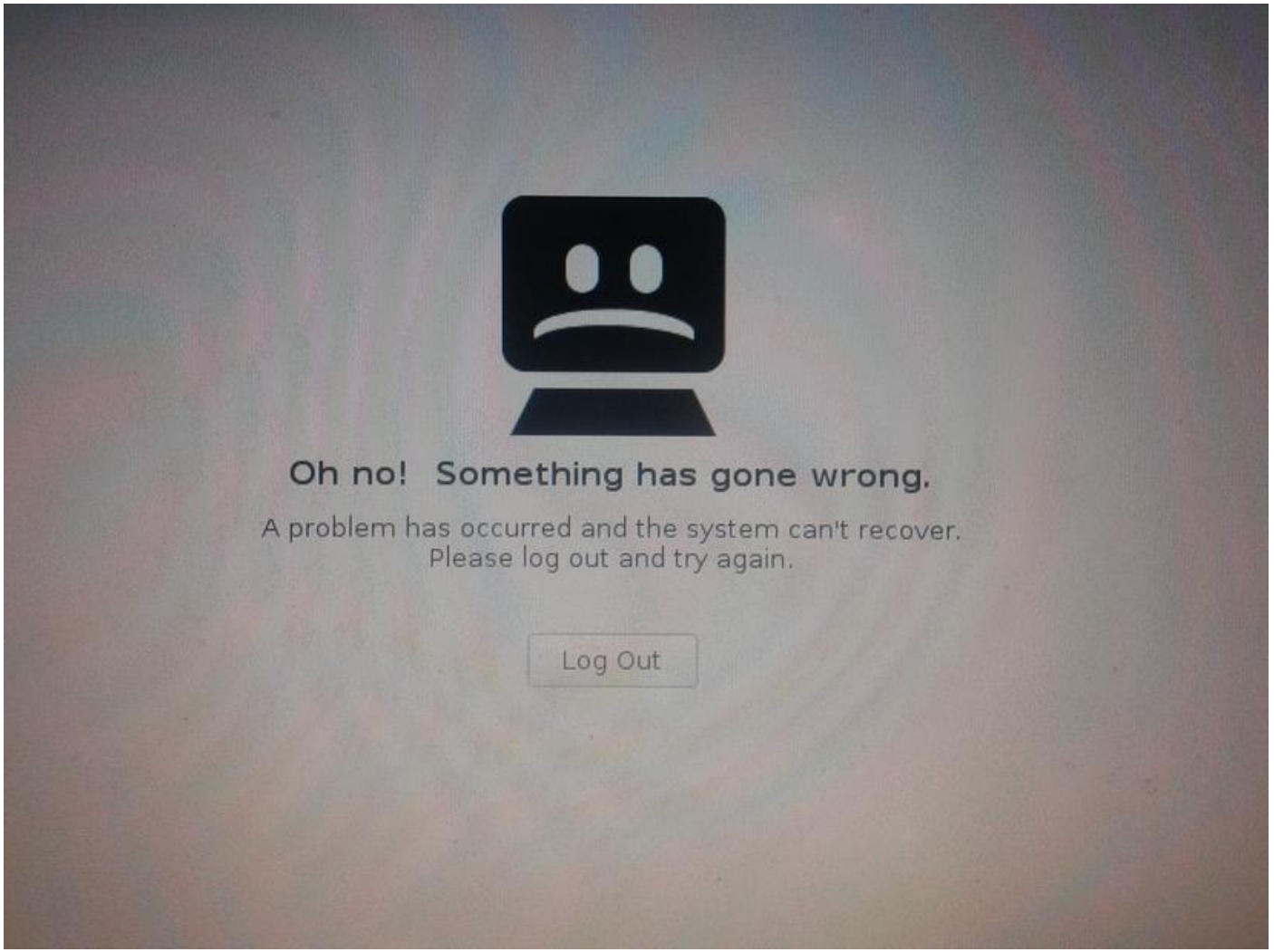
2. /home is full – Home folder fills up with user data files. Clear unwanted files and folders

3. /var is full – unsent logs to server / erroneous log creation due to mis-configured devices. Clear all logs ends with ".gz" under /var/log

```
sudo rm -rf  /var/log/*.gz
```

Display Issues

Gdm / Gnome Display issues



Gdm / Gnome Display Issues

1. If error comes before login screen:
    a) Press ctrl+alt+F1 and login with admin user
    b) Ensure network connectivity and connection with repo “sudo apt-get update”
    c) Once done run “sudo apt-get install lightdm”
    d) Choose “lightdm” as default display manager
    e) Once installed “reboot” and check

Gdm / Gnome Display Issues

1. If error comes after login screen and before desktop display

    a) In login screen change session to “Gnome Classic” and then login

Gdm / Gnome Display Issues

1. If gnome-classic didn’t work
    a) Press ctrl+Alt+F1 and login as admin user
    b) Run “sudo apt-get install gnome-session-flashback “ (or) “sudo apt-get install cinnamon”
    c) Reboot and select appropriate session in the login screen and then login

Common fixes

1. For intel video cards:

    - In grub press “e” and give proper credentials. Append “nomodeset” or “i915.modeset=0” at the end of the line starting with “linux” and reboot

2. Installing AMD video cards:

    - sudo apt-get install fglrx-modules-dkms fglrx-control

    - Run “aticonfig --initial” after booting in F1 terminal

Common fixes

3. System boots up but ends up showing only “black screen” with a blinking cursor on top.

   Reasons: Issues with video card or power interface

   Fix: boot with “acpi=off” kernel option in grub

4. Installing non-free firmwares: Many devices require a firmware to operate. To install non-free firmware , run

   sudo apt-get install firmware-linux-nonfree

Printer Issues

Printer not working

1. Check whether printer is connected and powered ON
2. Restart printer service
    a) Click on the desktop “Start Printer” icon (or)
    b) Open terminal and type “service cups restart”
3. Open Sundry → Printer and ensure printer is not disabled ; if disabled right click and enable it
4. Open printer properties and ensure the data is print queue.
5. Check printer status as admin account ; if working check /var/log/cups/access.log and /var/log/cups/error.log for any permission issue for normal user.

Printer not working

1.USB printer:

1. Run “lsusb” and check printer is detected
2. Run “lpinfo -v” to find out if your printer gets detected by CUPS
3. For HP printers run “hpinfo -i” to check whether printer gets detected by CUPS

2. Network printer

1. Check printer is connected “ping <printer-ip>”
2. Check printer is detected via LAN through these protocols
   - /usr/lib/cups/backend/snmp
   - /usr/lib/cups/backend/dnssd

Printer not working - HP

Job is shown as complete but the printer does nothing

Some HP printers require non-free firmware to be installed.
Download appropriate firmware and install online / offline .
Run “hp-firmare -i ” to install offline

"/usr/lib/cups/backend/hp failed"

Confirm dbus is running - /etc/init.d/dbus status

If network printer try adding it as “http://” protocol

CUPS: "Filter failed"

Change the ppd file for the configured printer